



KCI Area Plan

Aviation and City Planning & Development Departments
Kansas City, Missouri
JUNE 2009



KANSAS CITY
MISSOURI

ORDINANCE NO. 090395

Replacing a portion of the KCIA Area Plan with the KCI Area Plan as a guide for the future development and public investment within the area bounded by the city limits of Kansas City, Missouri on the north, city limits to Amity and then along Highway 152 on the south, Platte/Clay County boundary on the east, and city limits of Kansas City, Missouri on the west. (247-S-112)

WHEREAS, on February 20, 1970, the City Council by Ordinance No. 37806 passed the KCIA Area Plan as a guide for development and redevelopment of that area generally bounded by the following described area: the city limits of Kansas City on the north, the city limits of Kansas City going east, then jog north to Barry Road, at I-29 jog south for approximately 1500 feet then east for approximately 3000 feet, then back north to Barry Road for approximately 6000 feet, then jog south approximately 2000 feet, then east approximately 3000 feet, then back north approximately 2000 feet, then back to Barry Road to Platte Purchase Road on the south, the city limits of Kansas City on the west and Platte Purchase Road on the east; and

WHEREAS, after further review, the City Development Department deems it appropriate to replace a portion of the KCIA Area Plan with the KCI Area Plan as a guide for the future development and public investment within the area bounded by city limits of Kansas City, Missouri (north), city limits to Amity and then along Highway 152 (south), Platte/Clay County boundary (east), and city limits of Kansas City, Missouri (west); and

WHEREAS, the City Plan Commission considered such replacement of a portion of the existing plan and approval of the new plan on April 21, 2009; and

WHEREAS, after all interested persons were given an opportunity to present testimony, the City Plan Commission did on April 21, 2009, recommend approval of the proposed replacement of a portion of the KCIA Area Plan with the KCI Area Plan; NOW, THEREFORE,

BE IT ORDAINED BY THE COUNCIL OF KANSAS CITY:

Section A. That the KCIA Area Plan is hereby amended by deleting the area bounded by city limits of Kansas City, Missouri (north), city limits to Amity and then along Highway 152 (south), Platte/Clay County boundary (east), and city limits of Kansas City, Missouri (west) and replacing this with the KCI Area Plan for that same area, which is hereby adopted. A copy of the KCI Area Plan is attached hereto as Exhibit A and incorporated herein by reference.

Section B. That the KCI Area Plan is consistent and complies with the FOCUS Kansas City Plan, adopted on October 30, 1997, by Committee Substitute for Resolution No. 971268, and is adopted as a supplement to the FOCUS Kansas City Plan.

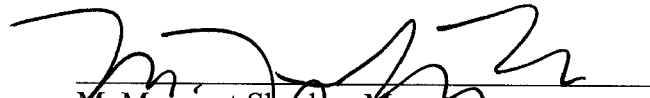
ORDINANCE NO. 090395

Section C. That the Council finds and declares that before taking any action on the proposed plan, all public notices have been given and hearings have been held as required by law.

I hereby certify that as required by Chapter 80, Code of Ordinances, the foregoing ordinance was duly advertised and public hearings were held.

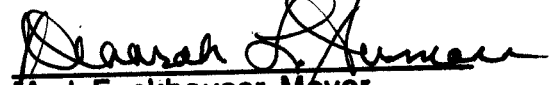

Secretary, City Plan Commission

Approved as to form and legality:


M. Margaret Sheahan Moran
Assistant City Attorney



Authenticated as Passed


Mark Funkhouser, Mayor


Vickie Thompson, City Clerk

JUN 18 2009
Date Passed

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These are the people, along with hundreds of citizens, who contributed to the creation of the KCI Area Land Use and Development Plan.

CREDITS

and acknowledgments

Mayor

The Honorable Mark Funkhouser

City Manager

Wayne A. Cauthen

City Council

Bill Skaggs..... 1st District
Deb Hermann1st District-at-Large
Russ Johnson 2nd District
Ed Ford2nd District-at-Large
Sharon Sanders Brooks.....3rd District
Melba Curls 3rd District-at-Large
Jan Marcason4th District
Beth Gottstein..... 4th District-at-Large
Terry Riley5th District
Cindy Circo..... 5th District-at-Large
John A. Sharp6th District
Cathy Jolly..... 6th District-at-Large

Planning Advisory Committee

David Albrecht	Todd Madison
Jack Broleman	Mark McHenry
Chris Byrd	Keith Moody
Kathryn Dusenbery	Charles Myers
Daniel Erickson	Frank Offutt
Dennis Fisher	Ray Olsen
Pete Fullerton	Jim Rice
Jim Hubbel	Mark Schenkelberg
Steve Jack	Aaron Schimdt
Jeffrey Kaczmarek	Mark Swope
Paul Kelly	Sheila Tracy
Betty Knight	David Warm

Technical Advisory Committee

Mell Henderson, Mid-America Regional Council Director Transportation

Daniel Erickson, Platte County Planning and Zoning Director

Greg Sager, Platte County Public Works Director

Mike Herron, KCMO Parks and Recreation Manager, North Parks Region

Steve Abbott, North Parks Region

Kellee Wood, EDC of Kansas City Planner

John Englemann, Aquila

Jim McBee, Aquila

Greg Kindle, Kansas City Power and Light

Pam Levetzow, Missouri Gas Energy

Mike Torres, Platte-Clay Electric Cooperative

Dick Jarrold, Kansas City Area Transit Authority

Jared Gulbranson, Kansas City Area Transit Authority

Maggie Maasen, Platte County Parks and Recreation

Brian Nowotny, Platte County Parks and Recreation

Linda Clark, Missouri Department of Transportation

Kirsten Munck, Missouri Department of Transportation

Allen Zaffit, Missouri Department of Transportation

Lee Ann Kell, Missouri Department of Transportation

Beth Wright, Missouri Department of Transportation

Daniel Gates, Kansas City Missouri Police Department

Dan Watts, Kansas City Missouri Police Department

Stuart Bullington, Kansas City Missouri Water Services

Scott Cahail, Kansas City Missouri Water Services

Wes Minder, Kansas City Missouri Public Works

Michael Chambers, AT&T Missouri

Frank Saleski, AT&T Missouri

Mark Crossley, AT&T Missouri

Jim Morris, AT&T Missouri

John Eckardt, City Planning and Development

Jared Wolters, Platte-Clay Electrical Corporation

Kenneth Brown, Platte-Clay Electrical Corporation





City Planning & Development Department:

Tom Coyle, AICP, Director

Robert Langenkamp, AICP, Assistant Director

Jade Liska, RLA, Project Manager, Division Manager of Citywide Planning

Kyle Elliott, AICP, Assistant Project Manager, Northland Planner

Ron Simmons, Graphic Design Specialist

Aviation Department Contributing Staff:

Mark VanLoh, Director

Ian Redhead, Deputy Director, O & M

Lapondzia Jones, Project Manager

Phil Muncy, Airport Representative, Engineer

David Long, Deputy Director, Properties & Community Development

Prepared for:

The City of Kansas City, Missouri

The Aviation and City Planning & Development Departments



Prepared by:

Patti Banks Associates



The City of Kansas City, Missouri Planning & Development Department

In Association with:

Landrum and Brown Incorporated



With Assistance from:

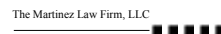
TranSystems Corporation



CB Richard Ellis



The Martinez Law Firm, LLC



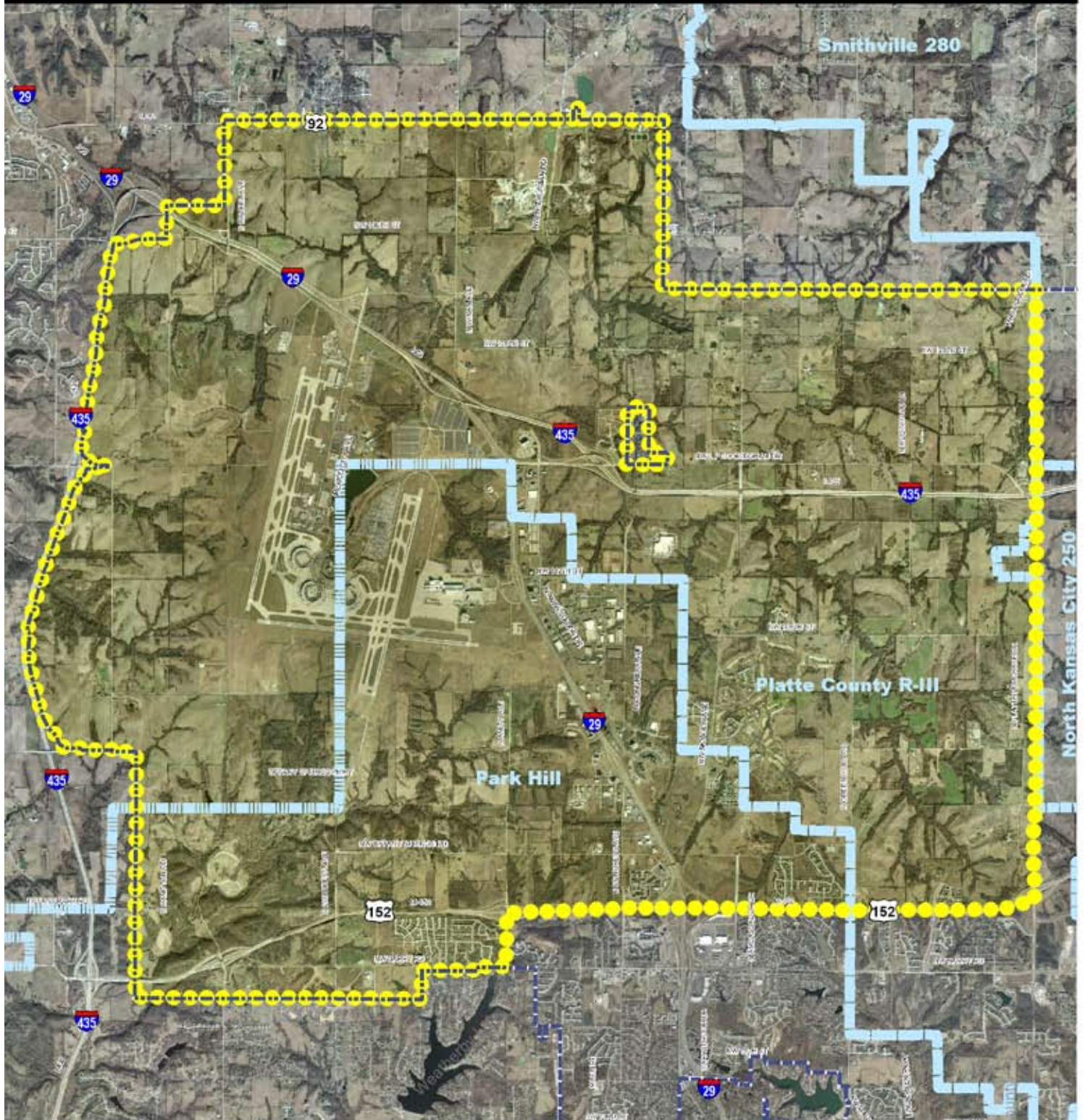
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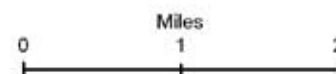


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Planning Area



- Study Area - 36,478.6 Acres
- ▬ School District Boundary
- ▬ KCMO City Limits



executive SUMMARY

The *KCI Area Land Use and Development Plan* is designed to determine a future vision for the KCI Area that establishes a balance among the interests and needs of residents and businesses, and develop strategies to make that vision a reality.

The KCI Area Plan will:

- Serve as the “plan of record” for the neighborhood.
- Establish a guide to lead the decision-making process involving neighborhood residents, developers, city staff, boards/commissions and the City Council.

Boundaries

The KCI Area Planning Area is defined by (see KCI Study Map):

- **North:** City Limits of Kansas City, Missouri.
- **South:** City Limits east to Amity, and then along Hwy. 152
- **East:** Platte/Clay County Boundary.
- **West:** City Limits of Kansas City, Missouri.

Key Recommendations - Land Use

PROPOSED LAND USE MAP AND CATEGORIES

The Proposed Land Use Map is the key map that guides development, redevelopment and zoning in the KCI area. The land use patterns are tied to specific detailed descriptions, which are summarized in the following. The descriptions are a guide for planning purposes and do not represent a change to existing zoning. (Full description of each category is defined on page 11).

Parks: Includes private or public lands reserved for parkways, parks or golf courses and intended to accommodate active and passive parklands, trails, recreation uses, environmentally sensitive areas, or any other lands reserved for permanent open space purposes.

Open Space/Buffer: Consists of private or public lands that are either temporarily or permanently reserved from development, including lands unsuitable for development, stream buffers, floodplains, woodlands, and severe slopes. Interpretive trails and/or passive recreation are not excluded.

Agricultural-Residential: Consists of agricultural-related and very low density residential development at one (1) unit per 40 acres with building heights of one to two stories.



The KCI Area Land Use Plan is designed to determine a future vision for the KCI area.



Parks includes private or public lands reserved for parkways, parks or for golf courses.



Agricultural-Residential consists of agricultural-related and very low density residential development.



Example of residential low.



Mixed Use Community development incorporates a successful pedestrian environment.



Example of a medium-to-large scale Commercial development.

Open Space Conservation Development: These areas are intended to develop design options that allow greater flexibility in exchange for the provision of a greater amount of common open space than required in conventional developments. Units per acre vary, with 60 percent of the area as open space preservation and a 10 acre minimum site size. Heights should be one to two stories.

Residential Low (up to 5.8 units/acre): Accommodates residential development of single-family dwellings of a variety of types. Density is up to 5.8 dwelling units per acre with building heights of one to two stories.

Residential Medium (up to 8.7 units/acre): Accommodates residential development primarily characterized by single-family detached dwellings or clustered development but may include a variety of single family development types with preserved open space to maintain an overall low net density and heights of one to two stories.

Residential Medium - High (up to 17.4 units/acre): Accommodates small lot single-family development and attached residential development of a variety of types, which may be intermixed throughout the neighborhood, at heights of two to three stories.

Mixed Use Neighborhood: Primarily intended to accommodate and promote a wide variety of moderate density residential building types with limited neighborhood-serving retail sales or services uses, all of which may be intermixed throughout the neighborhood. Recommended for 1 to 12 units per acre of residential uses, not to exceed 3,000 square feet of commercial per acre and with average heights of one to three stories.

Mixed Use Community: Promotes a mixture of neighborhood-serving office and retail services, institutional, civic, and medium to higher density residential uses intermixed through compatible site planning and building design. Recommended for a density of 12 – 15 units per acre of residential uses and 3,000 square feet commercial/10,000 square feet land with heights of 1 – 4 stories.

Commercial: Intended to accommodate “heavier” commercial activities, automotive-oriented uses, and/or outdoor operations that are not found in or compatible with mixed-use or neighborhood oriented environments. Typically including offices and retail establishments, medium-to-large scale businesses, and automotive-oriented services including drive-through facilities and car lots.

Industrial: Includes manufacturing, warehousing, wholesale and industrial uses. Residential use is prohibited and other non-industrial uses are restricted in order to protect the economic viability of manufacturing and industry.

Commercial and Industrial: Allows either Commercial or Industrial uses. Also allows a combination of the two uses primarily in business and industrial parks.

KCIA: This category allows either Commercial or Industrial uses (typically including offices and retail establishments, medium-to-large scale businesses, automotive-oriented services including drive through facilities and car lots, manufacturing, warehousing, wholesale and industrial uses) that are compatible with airport operation throughout this designated area.

Public/Semi-Public: Includes areas designated for a variety of uses that serve civic purposes and the public including but not limited to schools, churches, and public facilities that are government owned.



CONTIGUOUS DEVELOPMENT ZONE

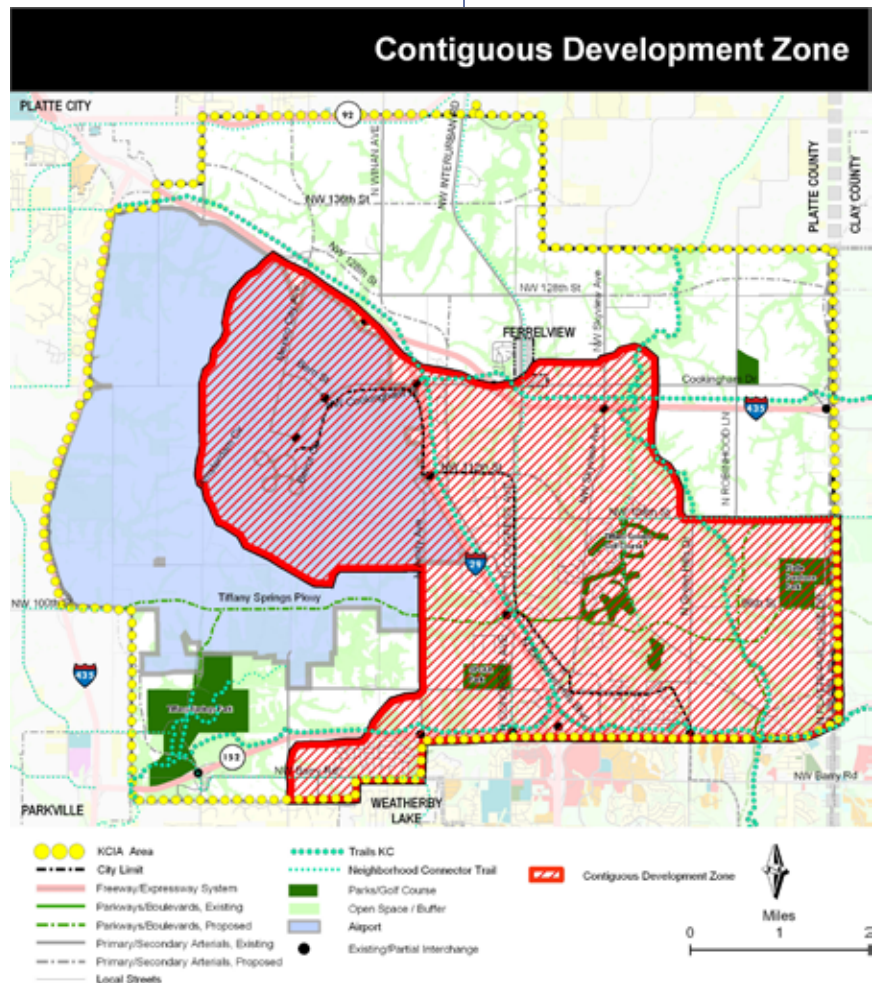
The Contiguous Development Zone Map illustrates areas for development based on existing and near term conditions. Criteria recommended must be re-evaluated based on change of conditions.

The Contiguous Development Zone is identified for promoting quality and contiguous development in the KCIA study area. This zone is consistent with the principles identified in the *FOCUS Kansas City Plan*.

NOISE RELATED LAND USE ISSUES

The 2009 Noise Compatibility Study update was completed as part of the KCI Airport Master Plan Update. A primary Study recommendation was an Airport Compatibility Overlay District.

- The recommended Airport Compatibility Overlay District is a series of four land use management zones within the City of Kansas City, each of which will have a defined boundary within which specific land use controls will be implemented.



The Contiguous Development Zone is discussed further in the Land Use and Land Use Goals chapter.



Follow the recommendations of the Bike KC Plan for bicycle routes when reconstructing roads in the KCI area and include bicycle parking in new development.



Support transit routes that could feed into bus rapid transit or light rail with higher densities.



The City's Bicycle/Pedestrian Coordinator should review all proposed intersection improvements to make sure they accommodate pedestrians.

Key Recommendations - Transportation

ROADWAY NETWORK

- N.W. Tiffany Springs Parkway and parts of Line Creek and Shoal Creek Parkway that will serve the area should be completed according to new Boulevard and Parkway Standards of Kansas City, Missouri.
- Although the KCI area is well served by highways and interchanges, some areas beyond the interchanges are not served. The emphasis should be on focusing from south to north and from I-29 to the east to reconstruct roads for safety and to accommodate bicylists and pedestrians.
- Street widths should be designed to serve proposed development with minimum impact on the environment.
- Roadway priorities are based on maximizing the existing roadway system and filling in gaps where they would make the system run more efficiently.

TRANSIT

- Accomodate light rail, should it serve the area in the future.
- In order to increase demand for transit service, increase development density and diversity of activities, design for pedestrian accessibility, and consider deterrents to driving.
- Support transit routes that could feed into bus rapid transit or light rail with higher densities, new mixed use and pedestrian accessible design in the N.W. Cookingham Drive corridor.
- Intensify development in the N.W. Tiffany Springs Road to N.W. Barry Road corridor and along I-29 that would benefit by and support a higher level of transit.

TRAIL, BICYCLE & PEDESTRIAN FRAMEWORK

- Implement the *Trails KC Plan*.
- Follow the recommendations of the *Bike KC Plan* for bicycle routes when reconstructing roads in the KCI area and include bicycle parking in new development.
- Apply Pedestrian Level of Service Standards (LOS) found in the Kansas City Walkability Plan to evaluate and make recommendations on new development and major redevelopment in the KCI area.
- The City's Bicycle/Pedestrian Coordinator should review all proposed intersection improvements to make sure they accommodate pedestrians and bicyclists.
- Prioritize street and highway crossings close to citywide and neighborhood trails for pedestrian and bicycle accommodations.

MULTI-MODAL DEVELOPMENT DESIGN

- Use the Multi-Modal Development Design as appropriate around proposed light rail stops, where mixed use is recommended and where redevelopment may occur at higher densities.
 - » Use Multi-Modal Prototype Principles and design standards to guide development.

Key Recommendations - Infrastructure

WATER SERVICES AND SANITARY SEWERS

- Encourage developers of projects requiring large amounts of water to work with the City early to determine steps, scheduling and costs to provide adequate water to the project.
- As sewers are provided, work to connect people to them and to design affordable payment approaches.
- Work with City departments to understand capacity needs of existing sewer treatment plants and to ensure adequate service for cohesive growth and for future development.

STORMWATER MANAGEMENT

- Enforce existing stormwater policies and guidelines
- Construct multiple-benefit “green” detention basins, including wet and dry extended detention basins and stormwater wetlands
- Implement stormwater capital projects that were part of the city-wide stormwater master plan
- Develop Best Management Practices (BMP) Design Criteria for how and when to use BMP techniques. BMP is a stormwater management approach that manages rainfall at the source, and includes approaches to reduce and filter runoff.

Key Recommendations - Urban Design

- Increase area identity and ease of orientation by promoting unique features or Gateways at key locations that could include landscape or architectural features.
- Provide special treatment for Primary Image Streets (new South Airport Entrance Road, I-29, N.W.Cookingham Drive, and Parkways) and Secondary Image Streets (N.W. Tiffany Springs Road and N. Green Hills Road).
- Create quality development by enhancing image, identity, appropriate scale of development, and geographic interrelationships.



Use the Multi-Modal Development Design as appropriate around proposed light rail stops, where mixed use is recommended.



LID is a stormwater management approach that manages rainfall at the source, and includes approaches to reduce and filter runoff.



Gateways at key locations can include landscape or architectural features.



Key Recommendations - Implementation

Implement the key recommendations of the Plan by following the implementation matrix that shows:

- **Action steps:** First steps in implementing Area Plan recommendations.
- **Implementation responsibilities:** Lead organizations and partners responsible for initiation, oversight, and monitoring. These may include:
 - » City: Includes various City Departments, Boards, and Commissions
 - » Agencies: May include Federal, State, and County departments and agencies
 - » Private Sector: May include developers and land owners
 - » Neighborhoods: May include homes associations, neighborhood groups, and homeowners
- **Anticipated time frame:** A general phasing of actions over which the recommendation is to occur, expressed in the following terms:
 - » Short-term: 1 to 5 years
 - » Medium-term: 5-10 years
 - » Long-term: over 10 years
 - » Ongoing



Provide special treatment for Image Streets, such as the lighting and plantings shown above.



Create quality development by enhancing image, identity, appropriate scale of development, and geographic interrelationships.



Use Mixed Use District Guidelines to create unique character that incorporates ways to see, move and spend time in natural areas.

Introduction

Vision Statement

In the KCI Area there will be:

- A strong relationship between KCI Airport and the area plan area.
- Development patterns that connect compatible uses and protect sensitive natural areas.
- A high quality of life maintained as the area develops.
- A viable economic development approach.
- Land uses compatible with predominant residential uses and the Airport.
- Good access by multiple means of transportation.
- A timely well-designed infrastructure framework that supports connected development.

Planning Area

The KCI Area Planning Area is defined by (see KCI Study Map):

- **North:** City Limits of Kansas City, Missouri.
- **South:** City Limits east to Amity, and then along Hwy. 152
- **East:** Platte/Clay County Boundary.
- **West:** City Limits of Kansas City, Missouri.

History and Purpose of the Plan

The KCIA Impact Area Development Plan, along with a Zoning Plan that established the GP zoning districts for the KCI area, were completed and adopted in 1970. An Airport Environs Land Use Guide was jointly prepared by the Kansas City Aviation and City Development Departments in 1980 and has also been used to inform development decisions. The General Development and Land Use Plan has been amended over 100 times since adoption, to reflect the fast growing and changing development in the area.

The purpose of this Plan is to determine a future vision for the KCI Area Plan that:

- Establishes a balance among the interests and needs of residents and businesses.
- Guides development and improvements to offer a broader, more diverse range of residential and commercial opportunities.



KCI has good access from the area's highways and interstates.



The Area Plan will encourage land uses that are compatible with predominant residential uses and the Airport.



The Area Plan will guide development and improvements to offer a broader, more diverse range of residential and commercial opportunities.



The KCI Master Plan Update will provide a vision for future growth and development of the Airport.



The Part 150 Noise Compatibility Study describes existing noise conditions and mitigation measures.



The KCI Area Plan is a tool to guide growth and development outside the boundaries of the KCI Airport.

The *KCI Area Plan* will:

- Serve as the “plan of record” for the neighborhood.
- Establish a guide to lead the decision-making process involving neighborhood residents, developers, city staff, boards/commissions and the City Council.
- Promote the citywide initiatives established in the City’s Comprehensive Plan, the *FOCUS Kansas City Plan*.
- Determine a future vision for the area and strategies to make the vision a reality.

The Aviation Department in cooperation with the City Planning and Development Department for Kansas City, Missouri prepared a new KCI Aviation Master Plan and Part 150 Noise Compatibility Plan at the same time and in coordination with the *KCI Area Plan*. It is the first time that three such plans have been done together. They will serve as the framework to guide decision-making as it relates to the KCI facilities and the City’s overall Comprehensive Plan.

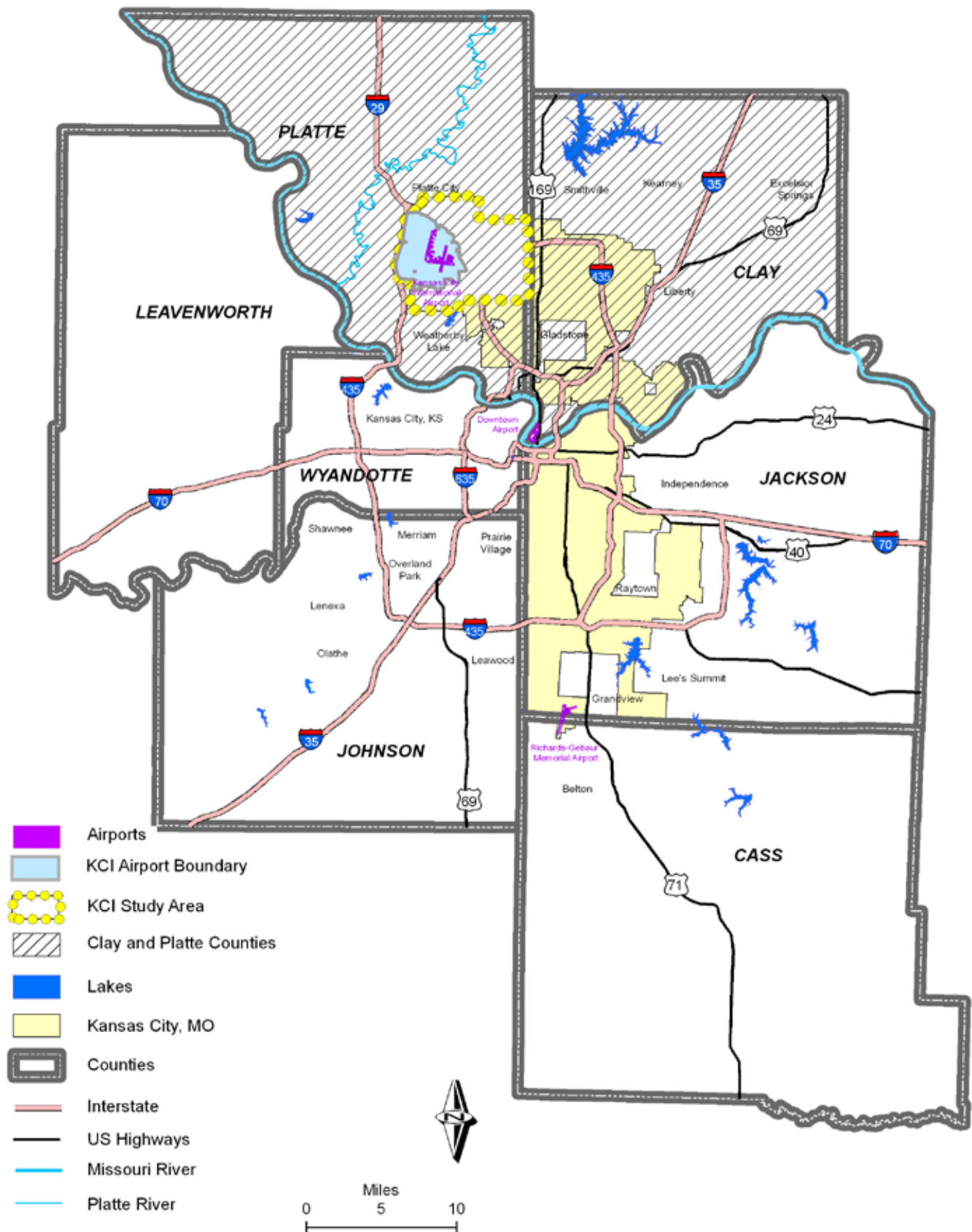
- **The Master Plan Update for KCI Airport:** Will provide a vision for the growth and development of the Airport property over the next 20 years. It will establish a framework for the development of Airport facilities and guide long-term on-Airport land use and development decisions.
- **The Part 150 Noise Compatibility Plan:** Provides for the preparation of two types of information.
 - » Noise Exposure Maps describe existing noise conditions in the Planning Area and projected future conditions if no noise abatement actions were taken
 - » Noise Compatibility Program, which provides guidelines for the mitigation of existing incompatible land uses and the prevention of development that would introduce new incompatible uses around the Airport
- **The KCI Area Plan:** Covers the airport and areas outside the airport boundaries. The area must respond to noise, development and market issues related to the Airport.

VISIONING

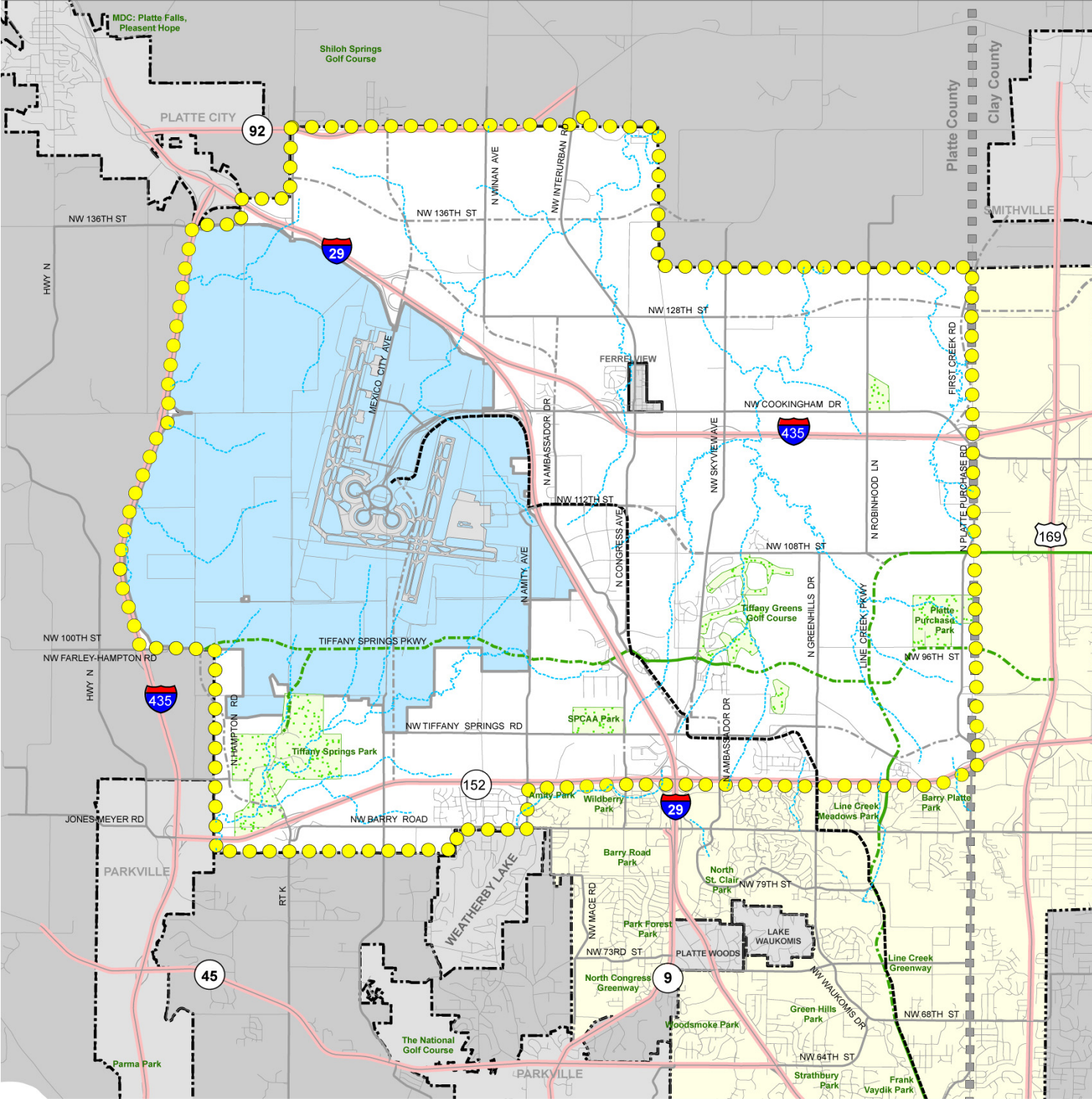
Aviation and City Planning and Development Departments jointly sponsored Visioning Workshops for stakeholders to respond to key questions about KCI and the surrounding area’s future. The results were used to draft goals for the Airport Master Plan, Part 150 Noise Compatibility Study and this Area Plan. Stakeholder meetings were held with:
















- Adjacent communities.
- Airport tenants and staff and City staff.
- Civic and business organizations.
- FAA and State of Missouri.
- Neighborhoods.

KCI Study Clay and Platte Counties in the Metro Context



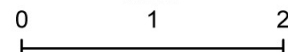
KCI Study Area



- | | | | | | |
|--|-------------------------|---|---------------------------------------|---|-------------------------------|
|  | KCI Area |  | Streams |  | Parkways/Boulevards |
|  | Airport Boundary |  | Local Streets |  | Parkways/Boulevards, Proposed |
|  | Parks |  | Primary/Secondary Arterials |  | Freeway/Expressway System |
|  | City Limit |  | Primary/Secondary Arterials, Proposed |  | Special Purpose Rapid Transit |
|  | Adjacent Communities |  | County Boundary | | |
|  | Unincorporated Counties | | | | |



Miles



PLANNING ADVISORY COMMITTEE (PAC)

A mayoral appointed Planning Advisory Committee served as the advisory body for all three plans. The community leaders provided input at 6 meetings throughout the 2-year process on factors that affect public acceptability, site utilization concepts, and land use.

COMMUNITY WORKSHOPS

A series of 5 public workshops formed the base of the planning effort and were used throughout the process to help residents and stakeholders understand and influence:

- Challenges and opportunities.
- Alternative scenarios.
- Preferred land use alternative.
- Draft Plan.
- Final Plan.

TECHNICAL ADVISORY COMMITTEE (TAC)

This group, which was made up of City staff, Platte County staff, State staff, representatives of adjoining communities, and others, provided technical support at 6 meetings throughout the 2-year process.



The Planning Advisory Committee served as the advisory body for all three plans.



Participating in the visual preference exercise at an Area Plan public open house.



The Technical Advisory Committee (TAC) provided technical support throughout the planning process.



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Land Use

and Land Use Goals



Introduction

The Land Use Plan addresses:

- The planning context for decision-making.
- Principles that guide the Plan.
- Categories of land use that are proposed in the KCI area, outside of the Airport.

The Land Use Plan presents a Proposed Land Use Map that is to be used in development, redevelopment, and zoning decisions. The Proposed Land Use Map shows where the area should grow.

This chapter also presents specific recommendations on development patterns with the approach to grow in a cohesive and connected manner.

Framework of Planning Concerns

UNDEVELOPED AREAS & ENVIRONMENTAL IMPACTS

- The KCI Area is very large, 53 square miles, which is roughly twice the size of Liberty, Missouri.
- 55 percent of the land in the Planning Area is vacant or in agricultural use. Another 30 percent is publicly owned for park use or Airport use. Less than 10 percent of the Planning Area is both developed and privately owned.
- The new stream buffer setback ordinance will impact approximately less than 10 percent of the undeveloped areas that are located in environmentally sensitive areas.

EXISTING DEVELOPMENT PATTERN

- The existence of Airport noise contours, the lack of sufficient east-west street connections and multiple drainage basins without sewer service have directed development in the KCI area.
- Development in the area has occurred in a primarily suburban nature in low to medium densities. New higher density developments could accommodate the changing market place and provide additional housing choices.
- A need for housing choice is present to serve the employment centers near the Airport.



55% of the land in the planning area is vacant or in agricultural use.



Existing low density residential development in the KCI area.



Example of medium density residential development that provides housing choice.



Residents of areas beyond the traditional areas of noise compatibility control may be exposed to numerous or loud single events.



Plan and construct infrastructure projects to harmonize with natural systems.



Rooftops provide opportunities to incorporate green spaces and natural environment into urban landscape.

EFFECTS OF NOISE EXPOSURE

- Noise exposure patterns that meet federally defined levels of environmental significance (65 DNL or more) will remain mostly on Airport property for the foreseeable future.
- Patterns of noise exposure of 60-65 DNL will extend off the Airport to both the north and south.
- Residents of areas beyond the traditional areas of noise compatibility control may be exposed to numerous or loud single events they may find objectionable.
- The contours off Airport property are largely related to approach noise that can only be moved by changing runway use. Such changes would increase numbers of adverse effects.
- See noise related land use issues and related maps in this chapter (see pages 19-24).

Guiding Principles

ENVIRONMENTAL AWARENESS

- Design development to minimize impacts on the natural environment.
- Use a comprehensive strategy to manage stormwater generated by development.
- Plan and construct infrastructure projects to harmonize with natural systems and opportunities to use LEED program.

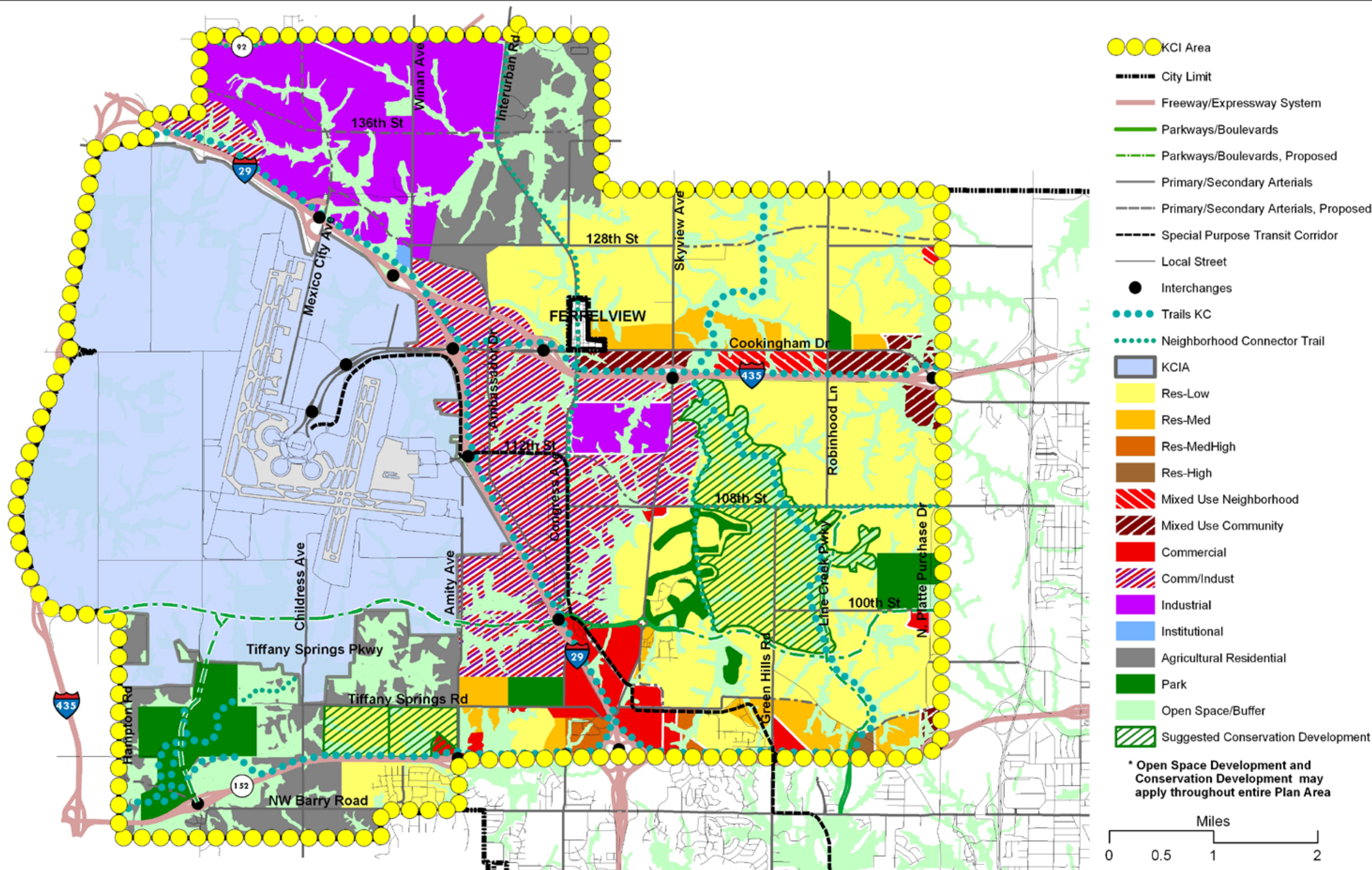
CIVIC AND OPEN SPACES

- Integrate Open Space Conservation development areas, floodplains, green spaces, woodlands, and parks as part of the urban landscape, and create linkages between neighborhoods, schools, nearby businesses, and employment centers.
- Integrate an interconnected mix of land uses, green space/ greenways, and building designs that harmonize with the natural environment and strategically develops on the ridge tops and preserves the stream corridors.
- Utilize city infrastructure investments, including arterial roadways, east-west street connections, pedestrian/bicycle paths, and transit to support all uses and create a connected mix of developments and neighborhoods.

NEIGHBORHOOD DEVELOPMENT

- Connect development to existing development/uses to allow for more efficient land use and transportation choices.
- Encourage proximity of interdependent and compatible uses such as neighborhood commercial accessible to residential areas for easy driving, bicycling, and walking.

Proposed Land Use Map





Zona Rosas mixed use center with compact development.

- Create neighborhoods that are compact, pedestrian-friendly, preserve natural resources, and include a mix of uses within walking distance.
- Provide a range of quality housing choices.
- Respect KCI noise contours and discourage development of incompatible land uses such as churches, schools, nursing homes and residential subdivisions within 65 or more DNL (see Noise-Related Land Use Issues and Airport Compatibility Overlay District Zones in this chapter).
- Preserve existing public transit service and promote future opportunities for enhanced service.

Proposed Land Use Map and Categories

The following land use descriptions serve as a guide for future growth and development within the Planning Area by outlining recommended uses and densities for each category (see Proposed Land Use Map page 9). The land use designations are for planning purposes and do not represent a change to existing zoning.

Parks: Consists of private or public lands reserved for parkways, parks or golf courses and intended to accommodate active and passive parklands, trails, recreation uses, environmentally sensitive areas, or any other lands reserved for permanent open space purposes. This includes Tiffany Springs, Platte Purchase and Amity Parks and the Tiffany Greens Golf Club.

Open Space/Buffer: Consists of private or public lands that are either temporarily or permanently reserved from development, including lands unsuitable for development, stream buffers, floodplains, woodlands, and severe slopes. However, land in this designation may be used for interpretive trails and/or passive recreation.

Agricultural-Residential: Consists of agricultural-related and very low density residential development. This land use classification corresponds with the “AG-R, Agricultural-Residential” zoning



Preserve existing public transit service and promote future opportunities for enhanced service.



Parkland can be used for both passive and active recreation.



Open space/buffer includes land temporarily or permanently reserved from development.



Agriculture is a major current use in the KCI area.



Open Space Conservation development provides more open space through flexible design standards.

category within the new zoning ordinance. Density under this land use category is one (1) unit per 40 acres with building heights of one to two stories.

- Intended primarily for areas of the outer edge of urbanized development south and northeast of the Airport. Development of land at higher densities is usually premature, due to lack of adequate utility services, roadways and other transportation systems and noise issues with numerous single noise events.

Open Space Conservation Development: This category is intended to encourage flexibility in design standards (example: reduced lot size and/or increased density) to provide additional open space and recreational amenities for residents, while preserving environmentally sensitive resources. These areas are intended to develop design options that allow greater flexibility in exchange for the provision of a greater amount of common open space than required in conventional developments. Development form must comply with the minimum site area and minimum open space standards in the new zoning ordinance. Units per acre vary, with 60 percent of the area as open space preservation and a 10 acre minimum site size. Heights should be one to two stories.

- Recommended in the eastern part of the Planning Area along Line Creek, Second Creek and First Creek, although it would be appropriate in most undeveloped parts of the area that are recommended for low density residential uses.

Residential Low (up to 5.8 units/acre): This category accommodates residential development of single-family dwellings of a variety of types. Single family dwellings on estate lots of up to 4.4 units per acre are preferred but other types of residential low density up to 5.8 dwelling units per acre are also appropriate, particularly near major streets and higher density and intensity uses. These dwelling types could include single family detached dwellings, zero lot line dwellings, and cottage houses. Semi-attached two-unit houses are allowed in restricted locations. In zero lot line dwellings, the building is shifted to one side of the lot so that there is a more usable side yard on one side of the house and very little or no private yard on the other side. Cottage Houses are small detached houses that are grouped with other cottages around a shared open space. Semi-attached two-unit houses are permitted only on corner lots with preserved open space to maintain an overall low

net density. Density is up to 5.8 dwelling units per acre with building heights of one to two stories. This corresponds to the R-10 and R-7.5 zoning categories within the new zoning ordinance.

- This is the predominant residential development type recommended for the area.
- The Plan encourages a high level of connectivity in Residential Low neighborhoods, minimizing cul-de-sacs and encouraging short blocks and low traffic streets that promote walking and bicycling.

Residential Medium (up to 8.7 units/acre): This category accommodates residential development primarily characterized by single-family detached dwellings or cluster single-family developments including zero lot line dwellings, cottage houses, or attached single-family (two-unit dwellings) with preserved open space to maintain an overall low net density. This category is also appropriate for planned public and semi-public uses considered compatible with residential uses, such as schools, religious institutions, and civic uses. Net density will be lower in locations where land is severely restricted by slopes, significant vegetative cover, or other significant natural features. This category corresponds with the “R-5”, R-6”, “R-7.5”, and “R-10” zoning categories within the new zoning ordinance. Residential Medium density is up to 8.7 dwelling units per acre at a height of one to two stories.

- Recommended primarily for the Hwy 152 Corridor and the Cookingham Drive corridor with good access to commercial and mixed use areas and major roadways.

Residential Medium - High (up to 17.4 units/acre): This category accommodates small lot single-family development and attached residential development primarily consisting of attached houses, two-unit houses, multi-unit houses, multiplexes, and apartment/condo dwellings which may be intermixed throughout the neighborhood. This category is appropriate for planned public and semi-public uses considered compatible with residential uses, such as schools, religious institutions, and civic uses. Net density may be lower in locations where land is severely restricted by slopes, significant vegetative cover, or other significant natural features. This land use classification corresponds with the “R-2.5” zoning categories within the new zoning ordinance. The density for this land use is up to 17.4 dwelling units per acre at a height of two (2) to three (3) stories.

- Recommended primarily for the Barry Road/Hwy 152 Corridor where it is already located and where there is good access to major roadways and commercial development.



Example of residential low.



Medium density residential development consists of up to 8.7 dwelling units per acre.



Example of medium-high density development.



One of the Mixed Use Neighborhood examples preferred by the public.



Mixed Use Neighborhood with a variety of residential choices.



One of the Mixed Use Community examples preferred by the public.



Mixed Use Community development incorporates a successful pedestrian environment.

Mixed Use Neighborhood: This category is primarily intended to accommodate and promote a wide variety of moderate density residential building types including single-family detached dwellings, zero lot line dwellings, cottage houses, attached houses, two-unit houses, multi-unit houses, multiplexes, apartment/condo dwellings, with limited neighborhood-serving retail sales or services uses, all of which may be intermixed throughout the neighborhood.

Development form may include vertical mixed-use development with a variety of business and residential choices, which enhance the pedestrian environment of the community. Residential densities may vary throughout the neighborhood and are generally higher than conventional single-family subdivisions. This category is appropriate for planned public and semi-public uses considered compatible with residential uses, such as schools, religious institutions, and civic uses. Limited nonresidential uses including live-work, small offices, and limited retail stores providing services to nearby neighborhoods may be permitted in this category under strict architectural and land use controls included in the provisions of the Development Standards and Guidelines. This land use classification corresponds with the “MPD” (Master Planned Development) zoning category in the new zoning ordinance. This Plan recommends, based on industry standards, 1 to 12 units per acre of residential uses, not to exceed 3,000 square feet of commercial per acre and with average heights of one to three stories.

- Four areas are recommended for this type of development: along Cookingham Drive near Robinhood Lane, at the intersection of 108th Street and Skyview Avenue, southeast of the intersection of Green Hills Road and Hwy 152, and near the intersection of N. Platte Purchase Drive and Hwy 152.

Mixed Use Community: This category promotes a mixture of neighborhood-serving office and retail services, institutional, civic, and medium to higher density residential uses intermixed through compatible site planning and building design. Development form includes mixed use development with a mix of business and residential that enhances the pedestrian environment of the community. Residential uses may be located on upper floors of a building’s business use, or may include attached or multi-unit houses, multiplexes, or apartment/condo buildings commingled nearby to promote diversity and a successful pedestrian environment. Non-residential uses are limited to compact, pedestrian/neighborhood-oriented services rather than large-scale or automotive-oriented uses. Given close proximity to residential uses, all business developments must be well-planned and designed in accordance with the Development Standards and Guidelines. This land use classification corresponds with the “MPD” zoning category within the new zoning ordinance. This Plan recommends, based on industry standards, a density for this area is 12 – 15 units per acre of residential uses and 3,000 sq ft commercial/10,000 sq ft land with heights of 1 – 4 stories.

- Three primary areas are recommended for this type of development: Zona Rosa (where it is already located), Line Creek south of Hwy 152, and along Cookingham Drive near the two I-435 intersections.

Commercial: This category is primarily intended to accommodate “heavier” commercial activities, automotive-oriented uses, and/or outdoor operations that are not found in or compatible with mixed-use or neighborhood oriented environments. Uses typically include offices and retail establishments, medium-to-large scale businesses, and automotive-oriented services including drive-through facilities and car lots. This land use classification will correspond with the “O”, “B1”, “B2”, “B3”, and “B4” zoning categories, excluding Light Manufacturing within the new zoning ordinance.

- Most major commercial development should be concentrated in the vicinity of the intersection of I-29 and Hwy 152.

Industrial: This category includes manufacturing, warehousing, wholesale and industrial uses. Because this use category is intended to promote the economic viability of manufacturing and industrial uses and encourage employment growth, residential use is prohibited and other non-industrial uses are restricted. This land use classification will correspond with the “M” zoning categories within the new zoning ordinance.

- Recommended primarily for the area north of the Airport, as a compatible use to Airport noise contours; and as a future expansion area for industrial development, as infrastructure and the market demand increases.

Commercial and Industrial: This category allows either Commercial (typically including offices and retail establishments, medium-to-large scale businesses, and automotive-oriented services including drive-through facilities and car lots) or Industrial (manufacturing, warehousing, wholesale and industrial) uses throughout this designated area. It also allows a combination of the two uses primarily in business and industrial parks. Desirable uses will be a mixture of “B” and “M” zoning ordinances, offices, light industrial, and tourist oriented uses such as hotels.

- Recommended for the I-29 corridor, where such uses generally already exist.

KCIA: This category allows either Commercial or Industrial uses (typically including offices and retail establishments, medium-to-large scale businesses, automotive-oriented services including drive through facilities and car lots, manufacturing, warehousing, wholesale and industrial uses) that are compatible with airport operation throughout this designated area. This land use classification will correspond with the “KCIA” zoning category within the new zoning ordinance.

Public/Semi-Public: This category includes areas designated for a variety of uses that serve civic purposes and the public including but not limited to schools, churches, and public facilities that are government owned. More intensive uses like hospitals and large government office buildings should be limited to appropriate commercial, industrial, or high density residential areas. Large scale assembly uses in residential areas must be evaluated for appropriateness. This land use classification will correspond with the Public and Civic land use category within the new zoning ordinance.



One of the Commercial examples preferred by the public.



Example of a medium-to-large scale Commercial development.



Industrial uses are recommended primarily for the area north of the Airport.



Industrial warehouse in a business park.



The Contiguous Development Zone is identified for promoting quality and contiguous development in the KCIA study area. This zone is consistent with the principles identified in the *FOCUS Kansas City Plan*.



Contiguous Development Zone

INTRODUCTION

The *FOCUS Kansas City Plan* identified areas throughout the city as Development Priority Zones. The intent of which is to promote quality and contiguous growth that is both fiscally and environmentally conscious. Through public input, the KCIA planning process identified one Contiguous Development Zone in the KCIA study area.

INTENT

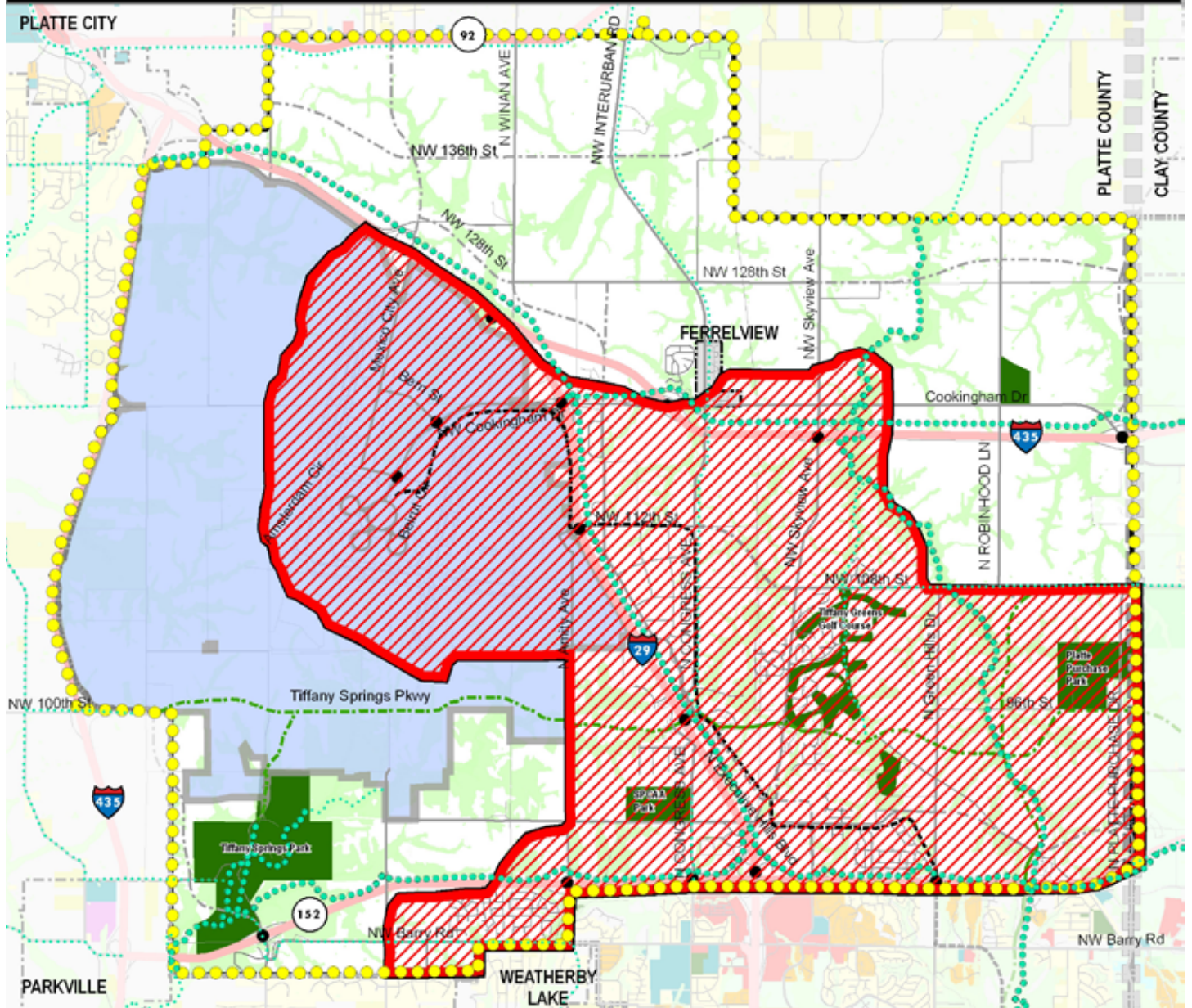
The amount of vacant developable land in the Planning Area available for development is many times greater than the anticipated market demand over the next 15-20 years. Identifying general development characteristics of areas could guide orderly growth that is both fiscally and environmentally conscious.

CONTIGUOUS DEVELOPMENT ZONE

The Contiguous Development Zone generally located in the center of the study area was identified after an evaluation of major constraints and planning issues, such as; environmental areas, airport noise contours, lack of adequate infrastructure, slope and topography issues, and roadways. The area serves as a target area for public investments in the KCI area.

- Zones were determined by existing conditions and anticipated short term improvements projects.
- Over the horizon of the document, conditions change. Therefore, factors must be re-evaluated based upon the change of conditions on a case-by-case basis.
- New development should be targeted within the Contiguous Development Zone or areas that are contiguous to existing infrastructure/development (see Contiguous Development Zone Map page 17).
- Public improvements and investments should be targeted to spur private investment in the Contiguous Development Zone.
- Higher priority should be given to public improvement projects within the Contiguous Development Zone.
- Developers should bear the full cost of infrastructure improvements in areas outside of the Contiguous Development Zone.
- Priority should be given for a regional employer or expanded employment base.

Contiguous Development Zone



- KCIA Area
- City Limit
- Freeway/Expressway System
- Parkways/Boulevards, Existing
- Parkways/Boulevards, Proposed
- Primary/Secondary Arterials, Existing
- Primary/Secondary Arterials, Proposed
- Local Streets
- Trails KC
- Neighborhood Connector Trail
- Parks/Golf Course
- Open Space / Buffer
- Airport
- Existing/Partial Interchange



Contiguous Development Zone



Miles

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Noise Related Land Use Issues

NOISE COMPATIBILITY STUDY

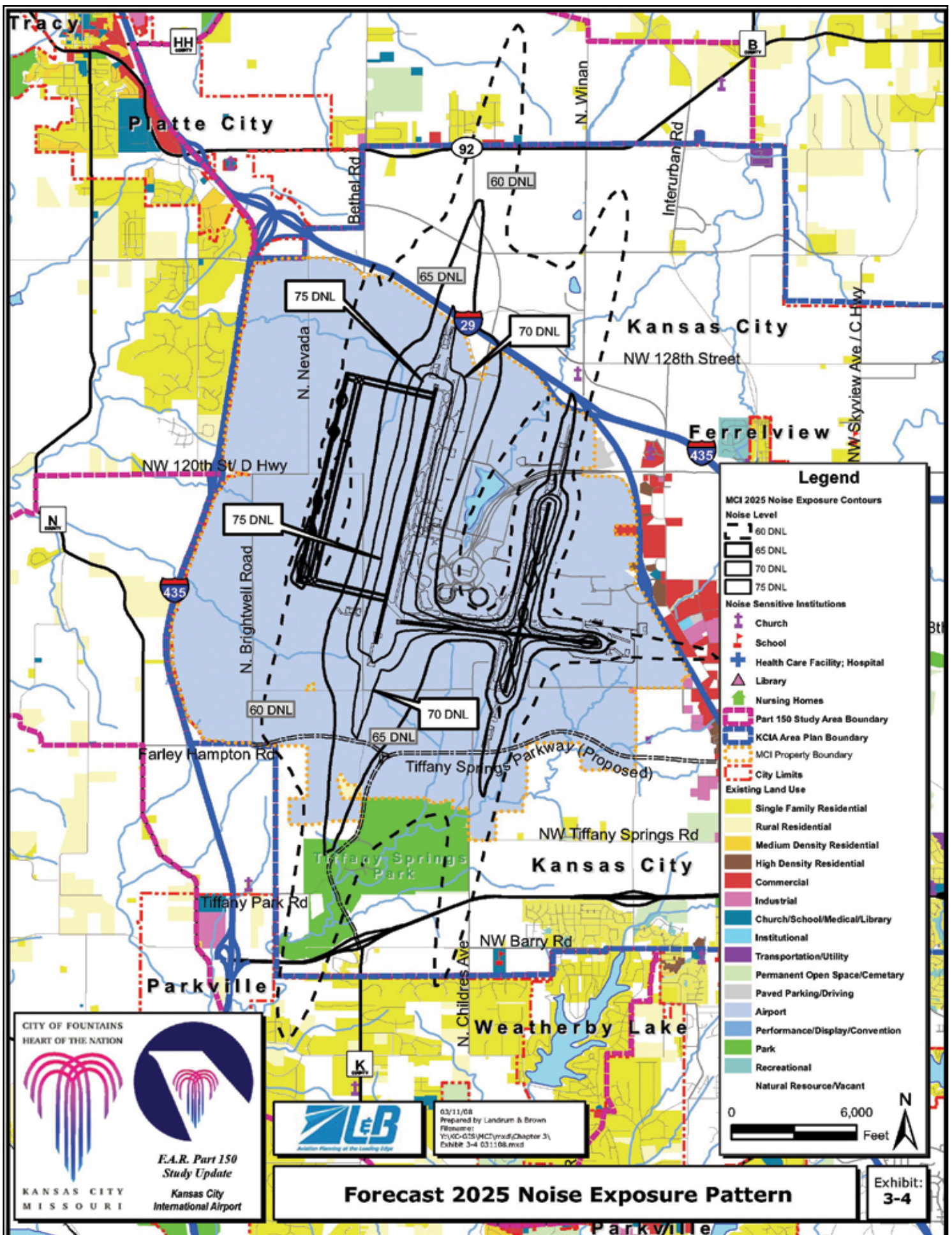
The Federal Aviation Regulations (F.A.R.) Part 150 Noise Compatibility Program is a voluntary program; its purpose is to reduce noise impacts on existing incompatible land use and to prevent the introduction of new incompatible land uses in areas exposed to high levels of aircraft noise.

The previous Noise Compatibility Study was conducted in 1994. The future year assessed in that update was 1998, with projections to the year 2010. Since the 1994 Part 150 Study was approved, a number of changes have occurred at KCI. Typically, the program measures developed for a Part 150 Study include:

- Noise abatement strategies that modify the locations where aircraft fly.
- Land use mitigation techniques such as sound insulation or acquisition.
- Land use management recommendations like planning, zoning regulations, and subdivision specifications.

The 2006 Noise Compatibility Study update utilized the 2025 condition and was projected using the forecast number of operations and fleet mix projected during the concurrent 2006 Master Plan Update. Also included was the development of a long-planned third parallel runway.

- See the City of Kansas City, Missouri Aviation Master Plan and FAR Noise 150 Study completed in 2009.



AIRPORT COMPATIBILITY OVERLAY DISTRICT

The recommended Airport Compatibility Overlay District is a series of four land use management zones within the City of Kansas City, each of which will have a defined and fixed boundary (see colored zones on the Land Use Mitigation Measure Map) within which specific land use controls will be implemented.

- **The four zones are identified as follows:**
 - » **Zone 1**
 - » **Zone 2**
 - » **Zone 3**
 - » **Zone 4**

The intent is to minimize risk of incompatible development within areas that are now or are expected to be exposed to aircraft noise of levels that may be intrusive to some residents.

The District will include the following three general measures that will apply to all parts of the District:

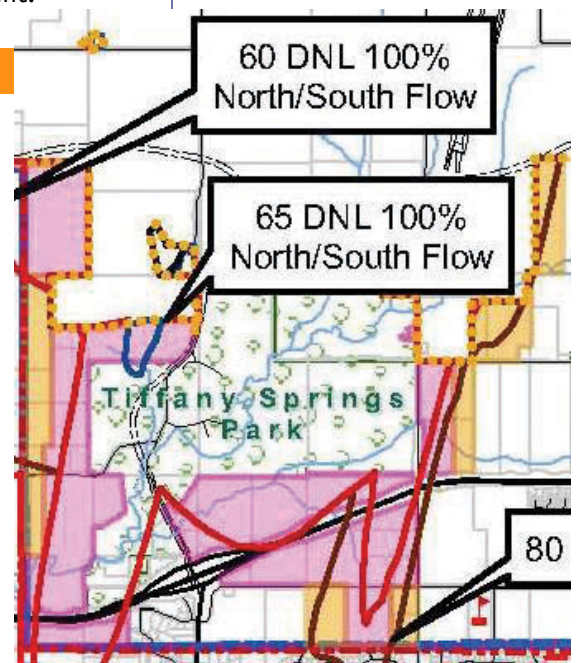
- Collaborative review by the Kansas City Planning and Development Department and the Kansas City Department of Aviation of development proposals within the District boundaries.
- Discourage development of churches, schools, nursing homes and residential subdivisions within the overlay districts.
- An Airport noise area disclosure statement and aviation easement (waiver of claim) to the deed for any undeveloped parcel rezoned or subdivided for residential development.

ZONE 1

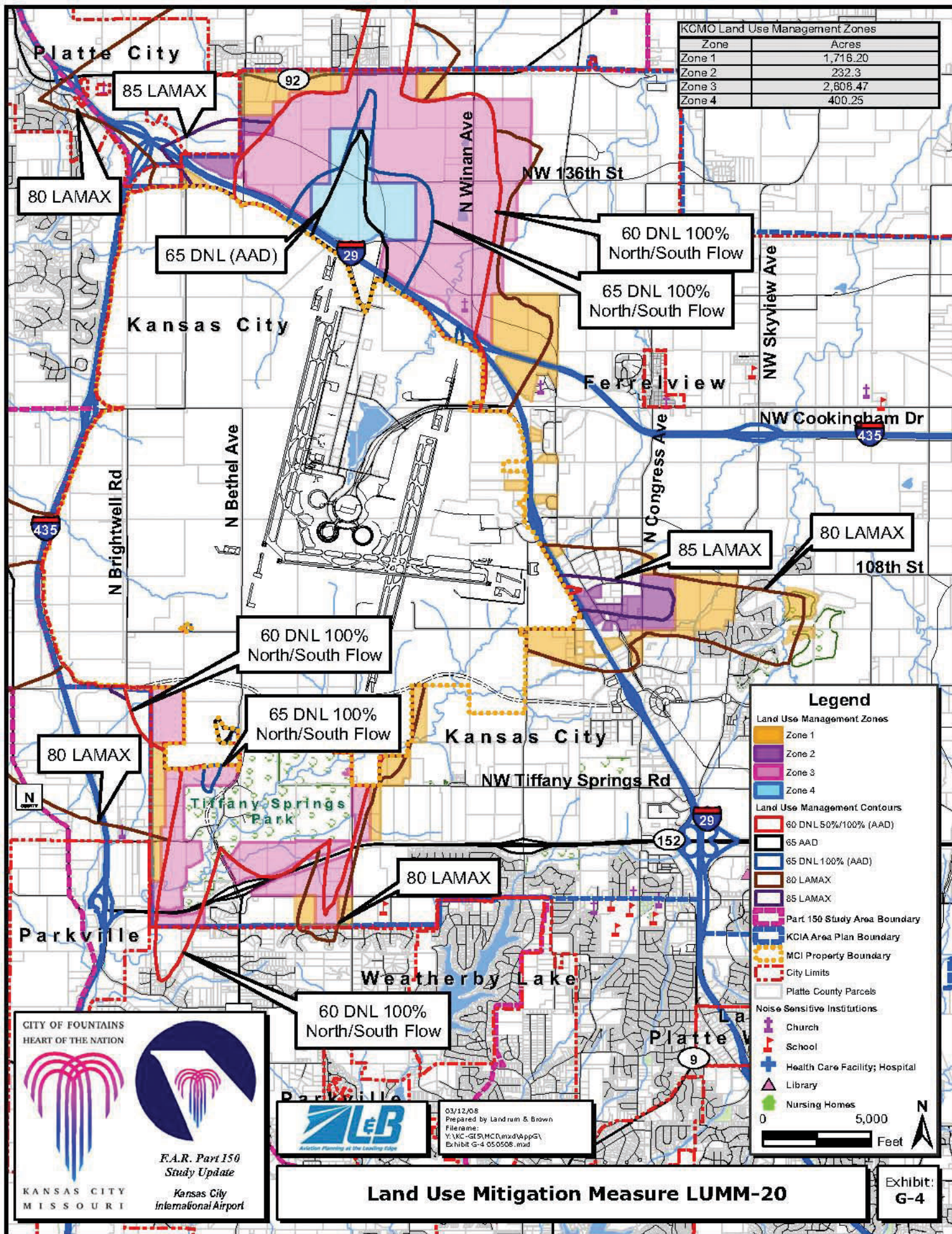
- **Goal of Zone 1:**
 - » Limit residential development densities to not more than three to five units per acre (Residential Low Land Use, see p. 12).
- **Location of Zone 1:**
 - » That area beyond the 60 DNL contour of the combined north and south traffic flow conditions, or the area exposed to Maximum Noise Levels (L_{max}) generated by a Boeing 737-700 noise exceeding 85 decibels (dB), yet remaining within the area exposed to L_{max} generated by a Boeing 737-700 exceeding 80 decibels as modeled along all approach and departure paths used by jet aircraft using any existing or planned runway at KCI appearing on the approved Airport Layout Plan (ALP) for 2025.



The Airport Compatibility Overlay District seeks to discourage incompatible land uses in four zones.

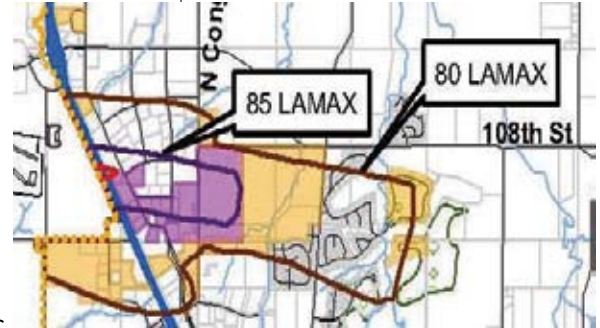


Section at Zone 1.



ZONE 2

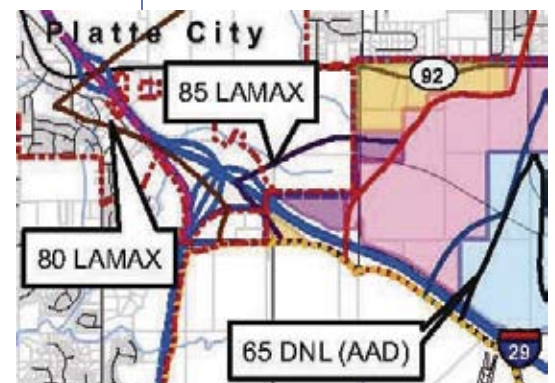
- **Goals of Zone 2:**
 - » Encourage build out of commercially or industrially zoned property and encourage new commercial/industrial development.
 - » Restrict residential development densities to not more than one unit in forty acres (Agricultural-Residential Land Use, see p. 12).
- **Location of Zone 2:**
 - » That area beyond the 60 DNL contour of the combined north and south traffic flow conditions, yet within that area exposed to Lmax generated by a Boeing 737-700 exceeding 85 dB as modeled along all approach and departure flight paths used by jet aircraft using any existing or planned runway at KCI appearing on the approved ALP for 2025.



Section at Zone 2.

ZONE 3

- **Goals of Zone 3:**
 - » Rezone property within this zone to allow commercial or industrial use (Commercial and Industrial Land Use, see p. 15).
 - » Limit residential development, if permitted, to density of not more than one unit per forty acres (Agricultural-Residential Land Use, see p. 12).
 - » If specific zoning is ever approved to allow residential development in this zone at greater densities, require that new development meet sound insulation reduction of 25 dB exterior to interior levels.
- **Location of Zone 3:**
 - » That area inside the 60 DNL contour of the combined north and south traffic flow condition for 2025.



Section at Zone 3.



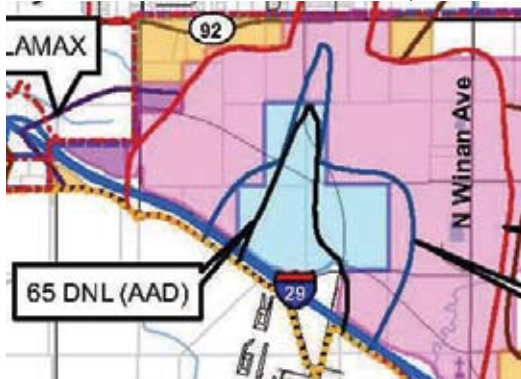
ZONE 4

- **Goals of Zone 4:**

- » Until acquired by the Airport, rezone to commercial or industrial use (Commercial and Industrial Land Use, see p. 15), prohibit any new residential development or development of noise-sensitive nonresidential uses.

- **Location of Zone 4:**

- » That area exposed to 65 DNL or more for the average annual day projected for 2013. This area has been identified by LUMM-23 and LUMM-24 for acquisition by the Airport to maintain noise compatibility.



Section at Zone 4.

Transportation



Introduction

The KCI area has great access to the region and other countries via the interstate and highway system and the Airport. Local access, however, is more challenging. Access to a good road system, transit, bicycle routes and trails, and places to walk may not yet be available. This chapter provides a guide to local connection improvements.



Framework of Planning Concerns

LIMITED ARTERIAL ROADWAYS

- The Planning Area has excellent highway and freeway service with adequate interchanges but limited arterial development.
- Generally, roadways follow a north-south pattern to avoid stream crossings and rugged terrain.
 - » East-west arterial roadways are spread as much as two miles apart

The KCI area has great interstate, highway and airport access, but has limited arterial roadways.

SUBSTANDARD ROADWAY CONDITIONS

- Existing roadways were not constructed to handle today's traffic volumes, especially near interchanges where the intersections between frontage roads and other arterial roadways are too close to interstate interchanges.
- Very few roadways in the area meet current City width and amenity standards.
- Designing roadway widths to match proposed and projected development types and densities can save money in the long term.



Some existing roadways do not meet current City standards.

LONG-TERM IMPACTS OF ROADWAYS ON DEVELOPMENT

- The limited arterial street network concentrates traffic and causes congestion, delay and safety issues.
- Because costs of arterial roadways are high and financing sources limited, lack of arterial roadways are a major constraint to development.
- Focusing roadway development and improvement in areas of more intense development can save money and serve more people.
- On average, it is two and a half times more expensive to expand an existing two-lane roadway to a four-lane road than to construct a new Greenfield four-lane roadway.



Capacity improvements can improve a roadway's Level of Service, safety, and sight distance.



ATA bus with bicycle accommodations.



Bicycle accommodations should be included in roadway improvements.



Use a network of trails to provide long distance recreational and residential/shopping/school/job connections.

MULTI-MODAL NEEDS

- Transit is currently limited to service along Barry Road and I-29, where there are higher concentrations of residential and commercial uses.
- Future expansion of transit, including potentially light rail, would support compact development.
- Public support of light rail is very high in the area (based on positive response of 60 to 80 percent of the public participants at a KCI Area Plan workshop).
- Bicycle transportation received positive support by almost 60 percent of the public participants at a KCI Area Plan workshop, and multi-purpose trails by over 70 percent.
- Currently, sidewalks are available primarily within newer residential subdivisions and shopping areas.
- Results of the Platte County Parks and Recreation Citizen Survey by ETC Institute on Sept. 28, 2008, showed the highest percent of households (77%) have a need for walking, hiking and biking trails.

Guiding Principles

CAPACITY

- Build a “just right” roadway system of a minimum size to serve projected uses and intensity of development.
- Improve and maintain the existing street network to accommodate projected traffic volumes.

MULTI-MODAL CONNECTIONS

- Increase choices in ways to get from residential areas to jobs, shopping, services, and recreation.
- Maintain reasonable travel time by all modes of transportation among key destinations by diversifying transportation options and connections.
- Use a network of trails to provide long distance recreational and residential/shopping/school/job connections.
- Increase coverage and frequency of public transit.
- Maintain good access from surrounding areas to the Airport in its current and ultimate layout.
- Bicycle accommodations should be included in the construction and/or reconstruction of roadways.

DESIGN ELEMENTS

- Create walkable residential, mixed use and commercial developments.
- Incorporate a blend of on- and off-street bicycle routes and support amenities.
- Develop parkways as a way to create value for residential development.



Recommendations – Roadway Network

PARKWAYS

Parkways take people to parks; they follow the natural terrain, generally include natural landscape and are more informal than Boulevards. A standard parkway, according to the *Boulevard and Parkway Standards of Kansas City, Missouri*, has the following features:

- 200 – 300 foot right of way.
- Minimum of 80 foot median (Unless approved by Parks Board).
- 8 foot wide sidewalks, 10 foot wide trails and/or *Bike KC* facilities, and recreational amenities.
- Minimum 17-foot wide plantings (Tree Lawns), naturalistic plantings in the median, water features, and natural features.
- Buildings are required to face the parkway.

Existing or proposed parkways:

- **Tiffany Springs Parkway:**
 - » Short segment between I-29 and Skyview Avenue completed
 - » Another section between I-29 and Amity Avenue designed and remainder between I-435 and Platte Purchase Drive under study
- **Line Creek Parkway:**
 - » Section between Barry Road and Old Stagecoach Road complete
 - » Section between Old Stagecoach Road and 108th Street not yet in conceptual design stage
- **Shoal Creek Parkway:**
 - » From the 108th Street intersection with Line Creek Parkway east to the Plan area boundary (not yet in conceptual design stage)



Example of a Parkway/Boulevard.



The type of naturalistic plantings that could be used in a Parkway median.



Ample sight distance is important for the safety of drivers and pedestrians.



Access management guidelines include the proper spacing of interchanges, public road intersections, traffic signals and driveways. When access points are too closely spaced, it is difficult to provide efficient traffic signal progression and queuing or congestion results.

ANALYSIS FOR NEW OR RECONSTRUCTED ROADWAYS

Transportation analysis of the Planning Area, using Kansas City's *Major Street Plan* (MSP), finds:

- Highways and interstates are extensive and function well, and the interchanges are comprehensive.
- Connectivity to the undeveloped land beyond the interchange influence areas is lacking.

Gaps in the *Major Street Plan* do not always take the form of unbuilt roadway, as in the case of Tiffany Springs Parkway, but the gaps may surface as inadequate capacity or substandard geometrics.

Two roadways that have narrow lanes with open drainage and limited sight distance due to substandard horizontal geometrics, are:

- Skyview Avenue, north of 108th Street to the planning area boundaries, with the exception of the vicinity of I-435 and Cookingham Drive.
- Tiffany Springs Road northeast of the I-29 and MO 152 system interchange.
- Follow the recommendations of the new Major Street Plan update when completed.

ACCESS MANAGEMENT

A common functional issue within the area is close intersection spacing. An example of this is the intersections between Tiffany Springs Parkway and the frontage roads, which are too close to the I-29 interchange entrance/exit ramps.

- Inadequate intersection spacing makes it difficult to provide efficient traffic signal progression and queuing or congestion results.
- Implement good access management techniques as directed by the Missouri Department of Transportation's Access Management Guidelines (<http://www.modot.mo.gov/safety/AccessManagement.htm>). Access management guidelines include proper spacing of interchanges, public road intersections, traffic signals and driveways.



Congestion can occur as a result of poor access management.

PROPOSED STREET MAP

The major recommendations related to roadways are illustrated on the Proposed Street Map on page 30, which recommends roadway widths appropriate for land uses, shown on the Proposed Land Use Map, page 9, projected to the planning year 2025. Examples of typical sections are shown on the Typical Sections Figure, page 31.

- The Proposed Street Map is subject to further refinement and does not replace the Major Street Plan, which is adopted by Ordinance and was in the process of major update in 2009.
- No recommendations are made for interstate and state highways as they are subject to separate transportation studies by the Missouri Department of Transportation (MoDOT).
- Streets that are not classified as arterial streets would be designed as sub-areas develop.

Summary of recommended roadway widths for different land uses:

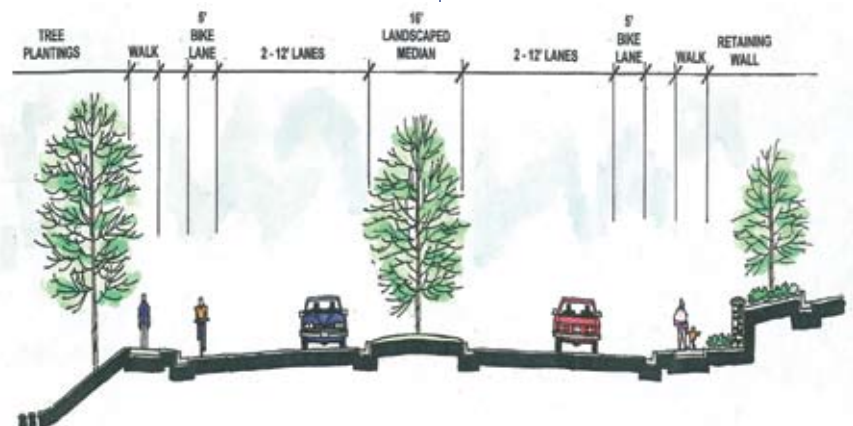
- **Agricultural Residential:** Can operate as 2-lane roadways (even at “full-build”) to support low-density use.
- **Open Space Conservation Development or Park District:** Can operate as 2-lane roadways (even at “full-build”) to support low-density use.
- **Low Density Residential:** Can operate as 2-lane roadways to support low-density use.
- **Medium Density Residential:** Can operate as 2- or 3-lane roadways with the third lane possibly being a left turn lane into a development.
- **High Density Residential:** Depending on intensity and layout, can operate as 2- or 3-lane roadways but may reach 4 lanes if bordering nearby commercial or other high-density uses.
- **Commercial or Industrial:** Depending on intensity, can operate at 4 or more lanes.
- **Parkways:** Follow the present standard parkway design in the **Boulevard and Parkway Standards of Kansas City, Missouri.**
- Due to topography, stream buffers, woodlands, etc., the Planning Advisory Committee & Technical Advisory Committee groups discussed options of 2, 3, and 4-lane parkways, with opportunities to have smaller divided median/or no median, with all the preservation contained on the outside/ inside of Parkway Row.



Roadways through medium density residential can operate as 2 or 3 lanes, with the third lane possibly being a left turn lane into the development.

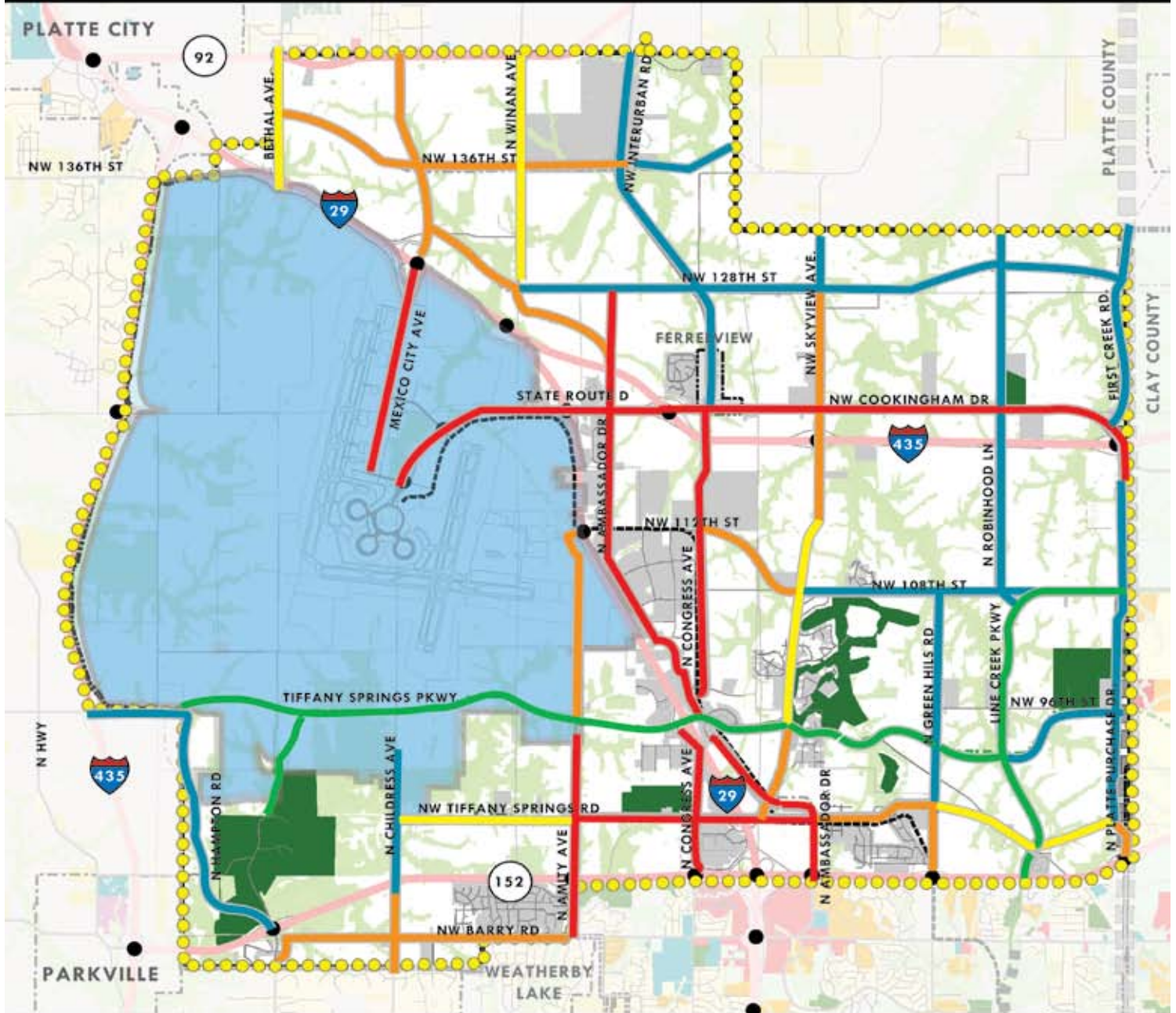


Depending on the intensity, roadways through commercial or industrial development may operate at 4 or more lanes. The arterial shown above has dedicated crosswalks for multi modal users, landscaped medians and lighting.



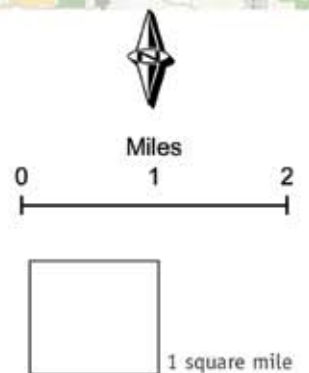
Alternative parkway typical section.

Proposed Street Map Number of Lanes to Year 2025



Legend

- KCI Area
- - - City Limit
- Freeway/Expressway System
- Parkway/Boulevards, Existing
- - - Parkway/Boulevards Proposed
- Primary/Secondary Arterials, Existing
- - - Primary/Secondary Arterials, Proposed
- Local Streets
- - - - - Special Purpose Transit Corridor
- Parks
- Open Space/Buffer
- Airport
- Existing/Partial Interchange
- 2 Lanes
- 2-3 Lanes
- 3-4 Lanes
- 4 or more Lanes
- 4 Lane Parkways *



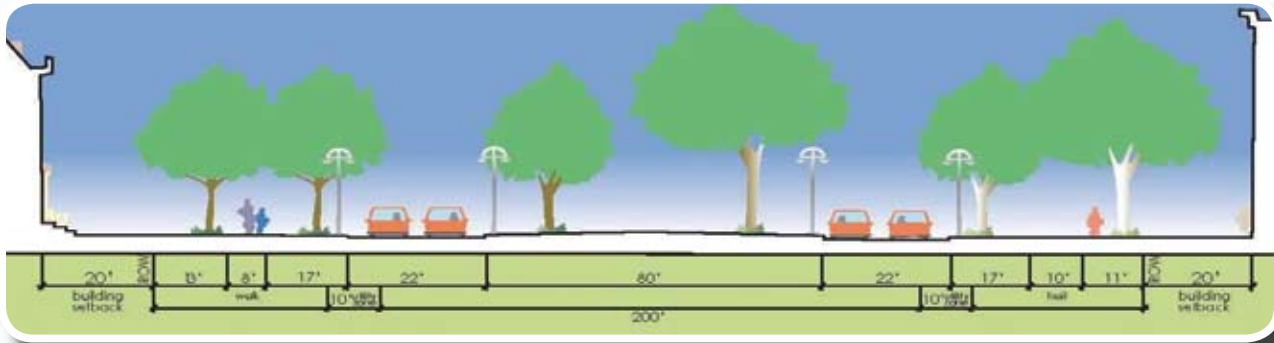
* See page 29 for parkway alternatives.

Typical Sections

PARKWAY (4-LANE) *

* See page 29 for parkway alternatives.

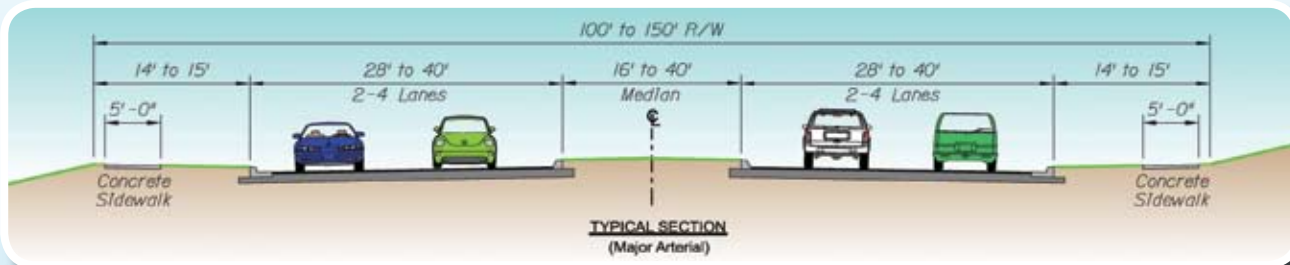
Parkways take people to parks. They generally follow the natural terrain and highlight the natural landscape.



- **Lane Width:** 11-foot minimum width, excluding curb and gutter.
- **Median Width:** 80-foot minimum.
- **Right-of-Way Width:** Typically varies from 200-300 feet, including sidewalks. (see Boulevard & Parkway Standards of Kansas City, Missouri)

MAJOR ARTERIAL (4-LANE)

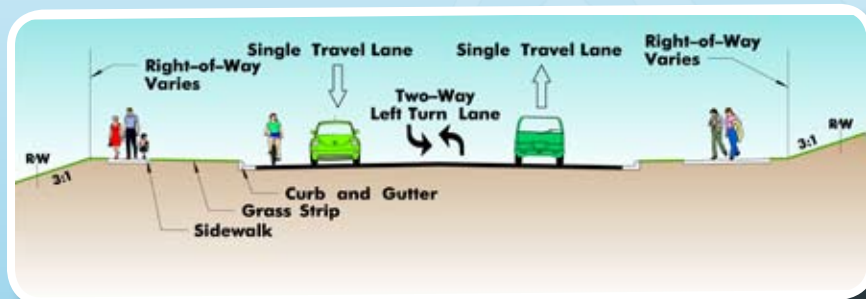
Arterial streets primarily serve the highest traffic volumes in the region. They connect districts and connect to major state and interstate highways.



- **Lane Width:** 12-foot minimum, excluding curb and gutter.
- **Median Width:** Typically varies from 16-40 feet.
- **Right-of-Way Width:** Typically varies from 100-150 feet, including sidewalks. (alt. 8-10' wide trail)

COLLECTOR (2- TO 3-LANE)

Collectors collect traffic to and from districts and distribute that traffic to arterial streets.

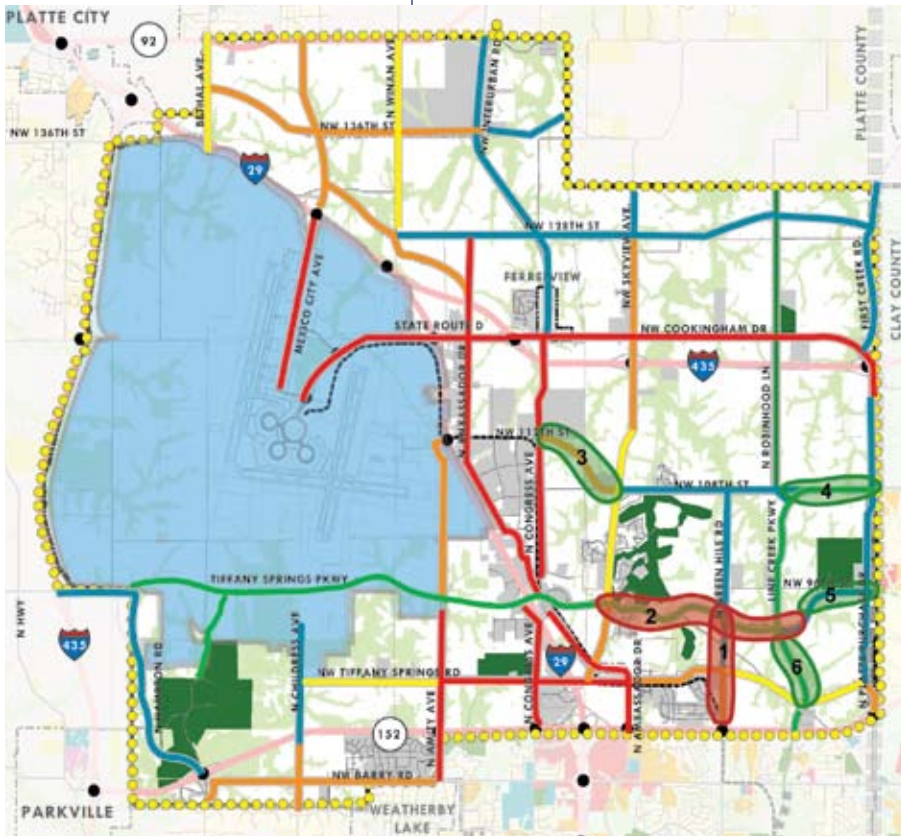


- **Lane Width:** 12-foot minimum width, excluding curb and gutter.
- **Median Width:** Medians are not usually present.
- **Right-of-Way Width:** Typically varies from 60-80 feet, including sidewalks. (bike lanes)



• **ROADWAY PRIORITIES**

- **Maximizing the existing roadway system:** This was the first priority of the public, the Technical Advisory Committee (TAC), and the Planning Advisory Committee (PAC). This could include:
 - » Improving and maintaining the existing road system and bringing it up to City standards, particularly in developed areas



- **Top Funding Priority**
- **Medium Funding Priority**

Roadway priorities.

- » Improving intersections and signalization
- » Filling in roadway gaps where they would make the system run more efficiently

• **Top funding priorities include (see Map):**

- » **Area 1:** N.Green Hills Road, from Hwy 152 to N.W.Tiffany Springs Parkway
- » **Area 2:** Tiffany Springs Parkway, east of Skyview Avenue (parkway construction was a PAC, Northland Chamber, and KCI TIF priority, but KCI public meeting participants did not give parkways a high priority for construction)

• **Medium Priority**

- » **Area 3:** Construction of the proposed connection between N.W.112th Street and N.W.108th Street
- » **Area 4:** Reconstruction of N.W.108th Street, from Line Creek Parkway to N.Platte Purchase Road
- » **Area 5:** Reconstruction of N.W.96th Street, from Line Creek Parkway to N.Platte Purchase Road
- » **Area 6:** Construction of Line Creek Parkway within the Planning Area

• **Funding sources that are currently being used:**

- » City of Kansas City, Missouri Capital Improvements Plan- N.W.Barry Road west of I-29 and N.W.Tiffany Springs Road in the vicinity of North Congress
- » Missouri Department of Transportation (MoDOT)-paving and bridge work on I-29 and paving of I-435

- » KCI Tax Increment Financing (TIF) Plan-constructing or reconstructing parts of Green Hills Road, Tiffany Springs Parkway, Tiffany Springs Road, and Skyview Avenue, and contributing to the I-29/Tiffany Springs Parkway Interchange

Recommendations - Transit

If this area is to have successful transit service it must have development patterns that are supportive of transit.

- Current transit service is only along Barry Road and serves adjacent businesses along I-29.
- Traditional urban transit services exist in the area and are characterized by fixed-route alignments and frequent all-day service.
- Some flex service exists where routes vary on demand.

The Plan recommends the following guidelines, based on the 2006 Transit Cooperative Research Program (TCRP) "Guidebook for Evaluating, Selecting, and Implementing Suburban Transit Services," as potential ways to increase travel demand in areas where improved transit service is desired:

- **Increase Development Density:** The more trip ends located within walking distance of a bus stop, the more potential passengers transit can draw.
- **Increase Diversity of Activities:** The greater the variety of trip purposes that occur in the area served, the more likely that consistent, all-day ridership levels will materialize.
- **Design for Pedestrian Accessibility:** The more comfortable an environment is for pedestrians, the more likely it is that potential passengers will choose to walk to a bus stop and use transit.
- **Consider Deterrents to Driving:** These include parking costs and traffic congestion which make use of the private automobile less attractive.

Because of the large undeveloped area and current development pattern, the KCI area is characterized by few of these factors. Zona Rosa may come closest with development intensity, a mix of commercial and residential activities and pedestrian accessibility, but is designed to accommodate automobile use.

LIGHT RAIL

Although the potential for light rail into the KCI area was enhanced by the public vote in 2006, which supported a light rail line to the KCI Airport via the former interurban rail line alignment and NW Barry Rd, it was repealed by City Council action in 2007. Further action and funding is dependent on a more intense study to address final alignment and feasibility. Until a comprehensive study is completed, including possible revisions to the alignment (such as moving the



Some types of development would make bus rapid transit (BRT) more feasible in the KCI area.



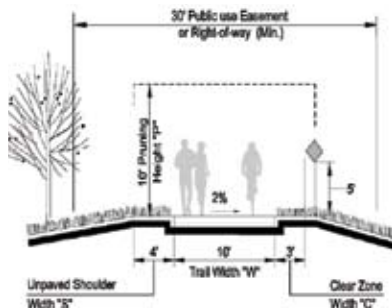
Dense development has the ability to draw greater ridership.



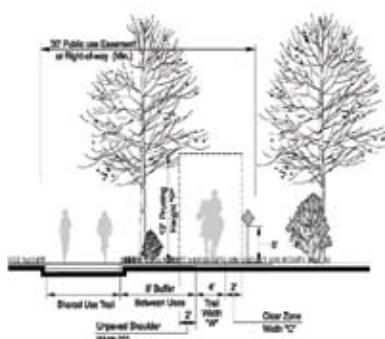
Pedestrian amenities at a transit stop.



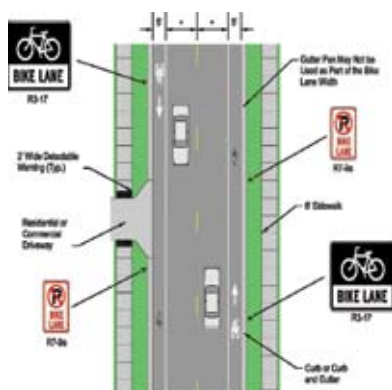
Although light rail may be well into the future, land use planning should accommodate the possibility.



Citywide Trail – Standard Section,
Trails KC Plan.



Multi-Use & Equestrian Trail Section,
Trails KC Plan.



On-Street Bicycle Lane Section,
Trails KC Plan.

alignment to along I-29 or routing the alignment to new terminals), and voter approvals secured, the existing transit corridor must be preserved within the planning area.

- The transit corridor shown on the KCI Plan maps is the Special Purpose Rapid Transit Corridor from the City's current Major Street Plan. This route could be altered because of likely changes at the Airport and shifts in development patterns.
- Review of the transit alignment should be considered based on new KCI future terminal location, new/existing employment centers, new interchanges proposed, access issues, and such. The new KCATA Alternative and Analysis (AA) review, which is required by the Federal Government, and/or the regional master plan study, along with review of the MARC Smart Moves plan, should examine the KCI Area Plan and KCI Airport Master Plan recommendations when deciding the ultimate alignment for the future transit corridor.

POTENTIAL EXPANSION OF TRANSIT ROUTES

The Preferred Land Use Map recommends higher densities, new mixed use and pedestrian accessible design in the Cookingham Drive corridor that would eventually support transit routes that could feed into bus rapid transit or light rail. Recommended intensification of development in the Tiffany Springs Road to Barry Road corridor and along I-29 could also benefit by and support a higher level of transit.

Recommendations - Trail, Bicycle & Pedestrian Framework

TRAILS

The *Trails KC Plan* recommends:

- Over 230 miles of shared-use off-road citywide trails.
- 26 miles of on-street connectors.
- 41 miles of equestrian trails.

The *Trails KC Plan* integrates with Neighborhood Connector trails, the *Bike KC Plan*, and regional trail plans such as MetroGreen and the Northland Trails Vision Plan.

Two trails in the KCI area have been recommended for funding in Fiscal Year 2008/09 by the Public Improvements Advisory Committee (PIAC) or inside the KCI TIF. They are:

- **Line Creek Trail:** Surveying and working toward construction.
- **Hwy 152 Trail:** Surveying.
 - » KCI TIF has funded approximately 3 miles of the 152 trail, T1, T2, T3 of the Tiffany Springs Market Center.
 - » Neighborhood connectors (like Amity Trail and the link south to Weatherby Lake by way of utility corridor and developments) should link to Trails KC (see Land Use Map, Page 9).

BICYCLE

The *Bike KC Plan*, a primarily on-street bicycle route system, recommends on-street routes for most major roadways designated on Kansas City's *Major Street Plan* in the KCI area.

The standard width for a separate on-street bicycle lane is 4 feet with 5 feet required if traffic speeds are greater than 35 miles per hour or 10 percent of the average daily traffic is truck traffic. In some cases a wider curb lane for shared bicycle and vehicular traffic is appropriate.

The *KCI Area Plan* recommends the following bicycle facility improvements:

- As the City and developers reconstruct roads in the KCI area, the design should include bicycle routes wherever designated on the *Major Street Plan* or the *Trails KC Plan/Bike KC Plan*.
- All new development in the area must follow the requirements of the Kansas City Zoning and Development Code as adopted. The December 2008 Council Draft requires short-term bicycle parking for all multi-unit residential buildings containing more than 12 dwelling units and all nonresidential uses.
- Review bicycle parking per the Zoning and Development Code.

WALKABILITY

In the *Kansas City Walkability Plan*, which was adopted in 2003, the KCI area shows low walkability demand or need because of lack of concentrations of housing close to employment, commercial facilities, schools, parks, churches, transit stops, medical facilities or public facilities. Without the density it is difficult to walk to destinations. Since then, the development of the Zona Rosa mixed use development and application of walkability principles to development reviews have begun to increase demand for walking and improve walkability in the area.

The *KCI Area Plan* recommends the following to continue improving walkability in the area:

- **Pedestrian Traffic Impact Analysis:** Apply Pedestrian Level of Service Standards (LOS) found in the Kansas City Walkability Plan to evaluate and make recommendations on new development and major redevelopment in the KCI area.
- **Pedestrian Level of Service Standards:** Apply Pedestrian Level of Service Standards (LOS) found in the Kansas City Walkability Plan to optimize pedestrian access along and across any roadway that is constructed or reconstructed in the KCI area.
- **Maximize pedestrian connections:** Within neighborhoods, giving particular attention to directness. This means designing for the shortest distance and good connections among residences in different parts of the neighborhood and between residences and neighborhood and *Trails KC/Bike KC Plans*.
- **Zoning and Development Code:** Review the new Zoning and Development Code for further requirements to walkability and connectivity.



KCI participants preferred walking in their neighborhoods.



Both mixed-use and equestrian trails are recommended per the *Trails KC Plan*.



Pedestrian crossings on major roadways can be difficult but important for the Planning Area.

A Multi-Modal Development Design

Throughout the planning process the public strongly supported increasing the potential for higher coverage and more frequent public transit, including light rail. The Planning Area presents many opportunities for multi-modal design.

MULTI-MODAL PROTOTYPE AREAS

Although multi-modal development design may work best around light rail stops, it can also be effective wherever a city wants compact design that is pedestrian- and bicycle-friendly, and can take advantage of transit. There are many places like this in Kansas City in both older and newer areas. This prototype design could be appropriate around:

- Light rail stops.
- Where mixed use is recommended.
- Where redevelopment may occur at higher densities.

MULTI-MODAL PROTOTYPE CHARACTERISTICS

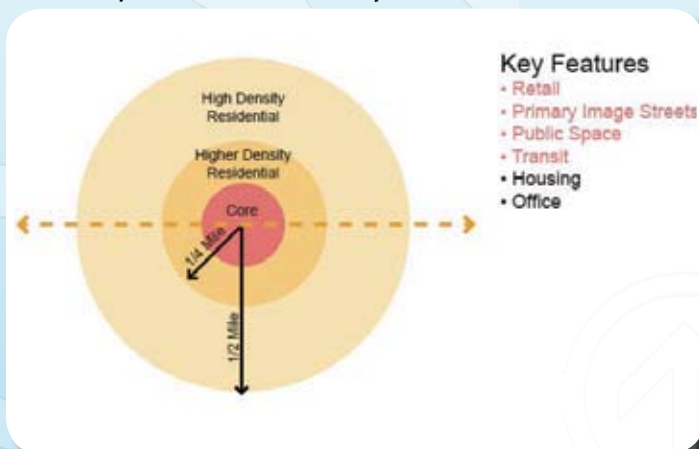
Dense office, commercial/retail and residential uses are the basis of multi-modal design. Critical to their development success is the mix of services that allow residents and workers to obtain many daily needs on foot, bicycle, or by transit, rather than by car.

Multi-modal developments are generally recommended within Mixed Use Neighborhood and Mixed Use Community land uses, where the density and intensity of surrounding development is capable of sustaining multi-modal transportation. Uses in these areas include vertical mixed use development with a variety of business and residential choices, which enhance the pedestrian environment of the community.

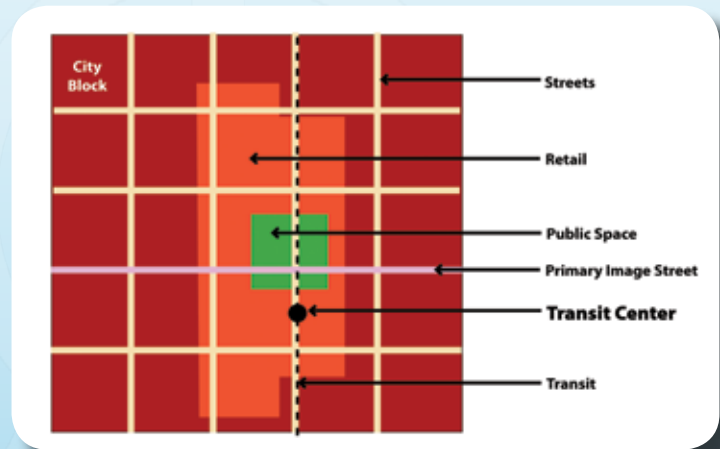
KEY CHARACTERISTICS

- 1/2 mile development radius.
- 10% to 20% open space.
- 10% mixed use development.
- Floor Area Ratio (FAR) at least 1.0 (one story buildings covering the entire land area, two story buildings covering half the land area, etc.).
- 300 to 500 feet-long blocks.
- 70% to 80% 1/4 acre or smaller lot residential.
- 60 to 80 total residential units within walking distance.

1/2 Mile Development Radius



Core Area



1/2 MILE DEVELOPMENT RADIUS

Multi-modal developments are organized within an easy walking distance of the station or other facility, typically a one-quarter to one-half mile development radius.

CORE AREA

Transit stations and other multi-modal stops would ideally be placed along major corridors within the development, and other development would be incorporated along with direct bicycle/pedestrian connections to the stops.

Multi-Modal Development

Mixed Use Community - Concept

PROTOTYPE CONCEPT

Walkable Development Form:

- Mixed use development with business and residential.
- Residential uses include attached or multi-unit houses, multiplexes, or apartment/condo buildings. (A)
- Neighborhood-oriented services. (D, H)
- 12-15 dwelling units per acre residential. (A)
- 3,000 sq ft commercial per 10,000 sq ft of land (C)
- Buildings are 1-4 stories in height. (C, D, E, G, H)

Site Level Design Elements:

- Orient building entrances along street. (A, C, D, G, H)
- Move parking facilities from between the front of the building and the street. (B)
- Establish build-to lines.
- Promote highly-articulated buildings. (G)
- Encourage overhangs, awnings and balconies. (D, G)
- Incorporate multi-modal stops into building architecture. (F)
- Design connections within and between developments.
- Allow for future street extensions. (H)
- Allow for shared and on-street parking. (B, D, H)
- Promote pedestrian-friendly, walkable streets. (D, G, H)



Multi-Modal Development

Mixed Use Neighborhood - Concept



PROTOTYPE CONCEPT

Walkable Development Form:

- Vertical mixed use with a variety of business and residential choices. (A)
- Nonresidential uses include live-work, small offices, and limited retail. (A, B)
- Residential densities vary between 1-12 dwelling units per acre. (C, D, E, H)
- 3,000 sq ft or less commercial. (A)
- Buildings are 1-3 stories in height. (A, C, D, E, H)
- Incorporation of civic or green space. (B)

Site Level Design Elements:

- Orient building entrances along street. (A, E, H)
- Move parking facilities from between the front of the building and the street.
- Establish build-to lines. (A, E, H)
- Promote highly-articulated buildings. (A, H)
- Encourage overhangs, awnings, porches, and balconies. (A, C, D, E, H)
- Incorporate multi-modal stops into building architecture.
- Design connections within and between developments.
- Allow for future street extensions.
- Allow for shared and on-street parking. (A, F)
- Promote pedestrian-friendly, walkable streets. (A, H)

- **Street crossings:** Important in improving walkability because the KCI area is characterized by highways, freeways and major roadways, and fewer local and collector streets.
 - » Streets with more than 4 lanes of traffic can form major barriers for pedestrians.
 - » The City's Bicycle/Pedestrian Coordinator should review all proposed intersection improvements to make sure they accommodate pedestrians.
 - » Street crossings close to citywide and neighborhood trails should be prioritized for pedestrian and bicycle accommodations.

MULTI-MODAL PROTOTYPE PLANNING CONCERNS

- **Transit:** Currently limited to service along Barry Road and I-29 as far north as the Airport where there are higher concentrations of residential and commercial uses.
- **Enhanced transit service:** Supported through the Mid-America Regional Council's (MARC) Smart Moves Initiative, which recommends a "Rapid Rider" line for the I-29 Corridor and a "Freeway Flyer" line along I-29. Freeway Flyer express service is recommended to link the Airport and Downtown.
- **Light Rail Route between Downtown and the Airport:** May vary based on phasing and whether a new terminal is built before or after the light rail line.
- **Multi-modal trails:** Supported by the Trails KC Plan and the Bike KC Plan, and other regional trail plans.

PROTOTYPE PRINCIPLES

The following six categories of planning principles and design standards for potential multi-modal development can be supplemented by low impact design approaches described in the Infrastructure Chapter.

Multi-Modal Land Use

- Include a mixture of uses within the same building or clustered together in a neighborhood, such as offices or residential located above retail. Uses attractive to riders or pedestrians might include coffee shops, drug stores or a post office.
- Include increased density and multiple destinations. This allows the rider or pedestrian to combine trips without long walks between destinations.
- Conform to the adopted land use plan and zoning and development code.



Design and landscaping of transit stops need to be considered together.



Bicycle parking should be in a secure location close to entrances.



Pedestrian routes should be well-lit and sidewalks should be separated from the street.



Transit shelter with quality amenities.



This plaza at Zona Rosa is a pleasant destination.

Public Spaces

- Design pedestrian-friendly streets—adding trees to give relief from the sun and rain, providing occasional seating, and encouraging public art.
- Make pedestrian routes secure by making sure they are well-lit, the sidewalks or paths have clear views ahead and behind, and that the sidewalks are far enough from traffic to feel safe.
- Incorporate parks, plazas and community destinations that not only are pleasant stops or provide relief along the way, but have many people-centered activities.

Building Scale and Orientation

- Orient buildings and entrances along the street and sidewalks instead of the parking lot. Encourage awnings for shelter and eye-level interest with store windows.
- Design block sizes that help calm traffic and promote multiple pathways to multi-modal destinations.
- Create human scale architecture with smaller massing and with variety of detail and interest, especially at eye level.

Good Transit Connections

- Provide for efficient transit operation as part of the multi-modal development design. Must consider bus/transit access, enough space for the stop/transit center, and quality facilities for transit users. The transit shelter and amenities, site design and landscaping must be considered together.
- Make sure parking that is convenient for drivers is not a barrier to pedestrians by making lots smaller, shared, structured, and with walkways through them to destinations.



Transit center oriented to the sidewalk with variety at eye-level.

Good Pedestrian Connections

- Construct sidewalks or walking paths not only on both sides of every street, but also within a development, connecting multiple destinations. Sidewalks and paths should be accessible to all based on the Americans with Disabilities Act standards.
- Design convenient and direct pedestrian connections/routes and smaller blocks so that people do not have to walk a long way out of their way to get where they want to go.
- Build safe street crossings for pedestrians by:
 - » Minimizing distance to cross or including refuge median for pedestrians
 - » Using special paving, painting and lighting to designate crosswalks
 - » Using automatic pedestrian signals
 - » Providing directional corner ramps for wheelchair and stroller access
 - » Enhancing sight lines for pedestrians and autos

Bicycle Circulation and Parking

- Construct bike lanes or separate bike paths connecting transit and other destinations.
- Provide signage (bicycle lane, share the road, etc.).
- Remove obstacles like grates that can catch tires.
- Provide bike parking or storage close to destinations.



Provide bike parking or storage close to destinations.



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environmental & stormwater Management



Introduction

Future development in the KCI planning area should be designed to respect the natural environment and coexist in harmony with existing natural features. Development planning should attempt to avoid engineering techniques, such as significant cut and fill to force-fit development into the environment. Instead, natural physical features should be incorporated into the overall development design, with drainage areas and other natural features left in their natural state.

A comprehensive approach for environmental and storm water management will be implemented in the KCI planning area to increase water “quality” and to reduce storm runoff “quantity”. This approach is consistent with the goals and objectives of the City’s Wet Weather Solutions Program and will:

- Provide a system-wide series of regional storm water facilities to reduce downstream flood damage.
- Provide localized storm water infiltration and detention in new development areas to protect the regional facilities and the streamways.
- Provide stream buffer setbacks.
- Provide areas of slope protection adjacent to streamway buffers.
- Protect environmentally and culturally sensitive areas.



Protecting high quality stream corridors, such as Todd Creek, can help prevent flood damage.

Environmental Approach

Future development in the planning area will be encouraged to retain its natural infrastructure and visual character derived from topography, woodlands, streams and riparian corridors. If found, these environmentally sensitive areas will be protected by the established Stream Buffer Ordinance as permanent public or private parks, conservation easements, or common open space. In many instances, these areas to be protected could also be located under the provisions of Section 5600 KCAPWA – Storm Drainage Systems and Facilities.

STREAM BUFFER ZONES

Streamside buffers are located along identified streams (see Stream Buffer Ordinance). The definition on the Streamside Zone is 25 feet wide from the edge of the active channel on each side of the stream. Only utility, road, and trail crossings are allowed, as well as properly designed stormwater outfalls, access for fishing and wildlife viewing, and trail overlook areas.



The Streamside Zone is 25 feet wide from the edge of the active channel.



Trails are permitted in the Middle Zone, which includes the 100-year floodplain.

Much of the Middle Zone in the planning area is located in the 100-year floodplain or 100-year conveyance determined by an engineer, and wetlands. This Middle Zone varies based on actual stream characteristics. Activities in this zone include all uses in the Streamside Zone, plus utility corridors and recreational trails. Vegetation management and stream bank stabilization is key in this Zone.

Outer Zones could have variable width, but it extends 75 feet from the edge of the Middle Zone, to a maximum of 150 feet (or 250 if using the open space development or conservation development). It includes slopes greater than 15% or mature riparian vegetation. If steep slopes or mature riparian vegetation extends beyond 150 feet from the edge of the Middle Zone, there are two options:

- If the maximum is 150 feet, the Outer Zone must be protected as permanent open space.
- If extended to a maximum of 250 feet, open space and conservation development can exist and additional flexibility for non-residential development is allowed. See the approved Stream Buffer Ordinance for exact details and regulations.



Example of existing woodland preservation.

WOODLAND AREAS:

Portions of the future development identified conservation areas which are heavily wooded and are designated as open space/buffer on the Environmental and Storm Water Management Plan map. A sensible balance must be employed with future development in these areas when providing for preservation of existing noteworthy environmental features. Areas with woodlands protection should use enhanced measures in development design to preserve significant trees or tree masses where possible. These measures may include:

- Cluster development (design) with flexible development standards such as reduced lot sizes and setbacks and alternative street designs to concentrate buildings on a part of the site (the cluster area) and allow the remaining land to be preserved as open space.
- It is the recommendation that tree surveys should be requested with all development applications in accordance with the KCI Development Framework and Guidelines. Applicants may voluntarily submit tree surveys and/or identify trees to be preserved with development. The tree surveys will identify trees to be preserved as well as mitigation measures for these trees over 10 inches in caliper that are to be removed by construction. Such mitigation may include planting a similar species of trees and should involve working with the City Forester.
- Consider revising the Zoning and Development Code to require the submittal of tree surveys with development applications

CULTURAL RESOURCES

The area north of the Missouri River has a rich history dating back to a period before the arrival of European settlers. Native cultures, both pre-historic and historic, left many artifacts and relics throughout the northland, both unknown and known.

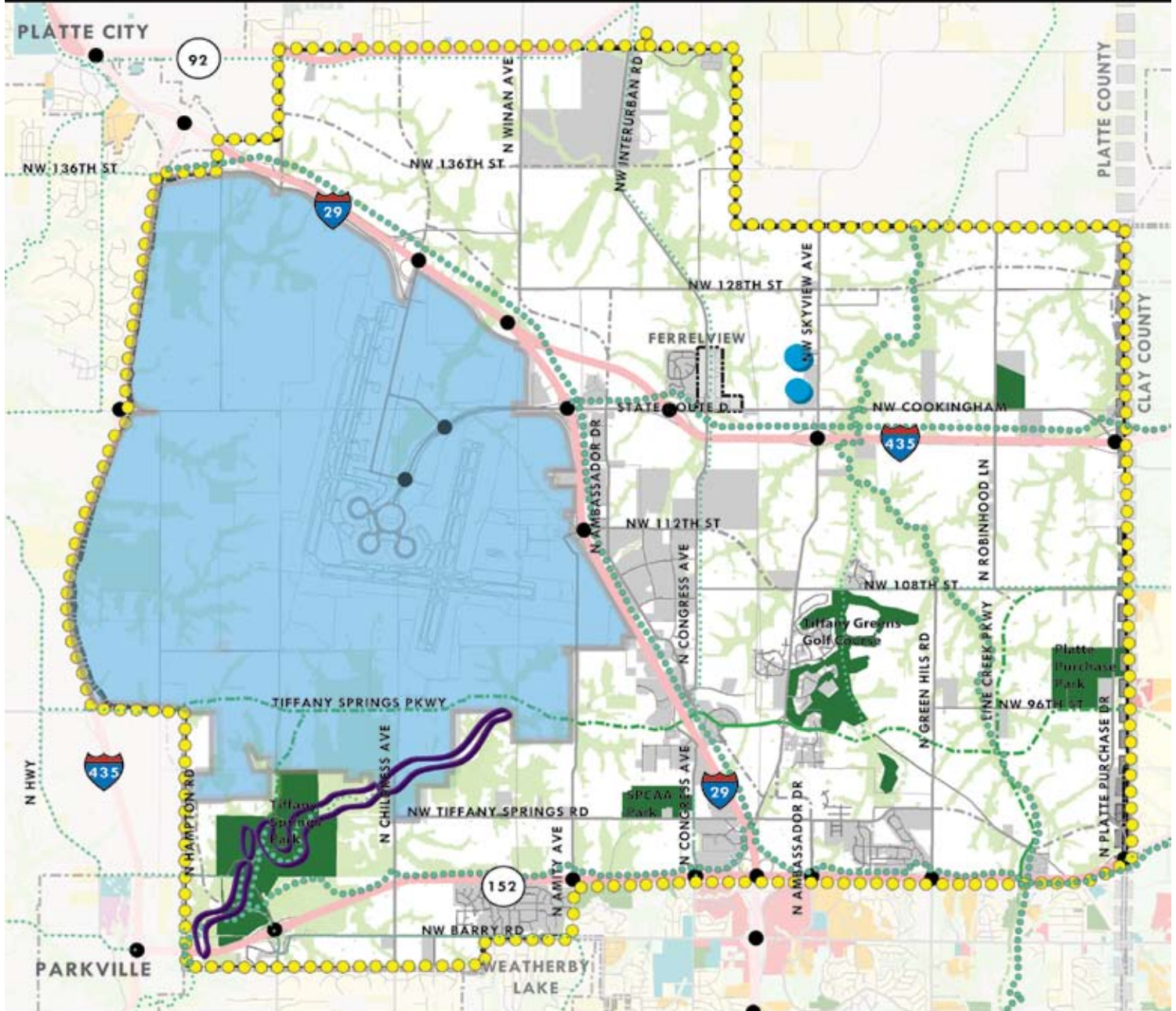
The identification and preservation of traditional cultural sites in areas with development potential may be a priority to many residents and Native American groups in the area. Given the potential for cultural sites in the planning area, a cultural resources survey (106, Assessment Study) may be appropriate and an archeological mitigation plan developed in accordance with federal laws. Such survey(s) and mitigation plan(s) may need to occur prior to or concurrent with future development plan applications or preliminary engineering for public infrastructure improvements such as roadway projects.



Cluster Development:

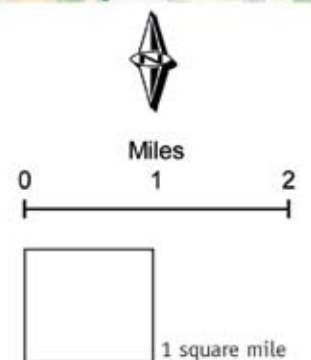
A form of planned development that concentrates buildings on a part of the site (the cluster area) to allow the remaining land (the open space) to be used for recreation, common open space, or preservation of environmentally sensitive areas. The open space may be owned by either a private or public entity.

Environmental & Stormwater Management



Legend

- KCI Area
- City Limit
- Freeway/Expressway System
- Parkways/Boulevards, Existing
- Parkways/Boulevards Proposed
- Primary/Secondary Arterials, Existing
- Primary/Secondary Arterials, Proposed
- Local Streets
- Trails KC
- Neighborhood Connector Trail
- Parks
- Open Space/Buffer
- Airport
- Existing/Partial Interchange
- Multiple-Benefit "Green" Detention Basin
- Streambank Stabilization



Storm Water Management Approach



OVERALL SYSTEM DESIGN

An overall system design approach will address the key adverse impacts of storm water runoff by:

- reducing pollutant loading from new developments;
- reducing downstream stream bank and channel erosion;
- reducing downstream overbank flooding; and
- safely passing or reducing the runoff from extreme storm events.

This approach relies on the use of regional storm water facilities combined with localized detention and Best Management Practices (BMPs) to route storm events in all three flood categories. The use of multiple smaller localized storm water storage areas constructed in conjunction with private development, instead of larger regional detention facilities, will improve the overall water quality and reduce the area and volume required for regional detention facilities. A system of smaller retention ponds will also aid in the preservation of local streams by decreasing water velocities during storm events. The location of possible detention facilities are identified on the Environmental and Storm Water Management Map.

Typical Best Management Practices (BMPs)

OPEN SPACE



Native Vegetation
Vegetated Open Space
Disconnect Impervious Surfaces
Phasing Development Grading

SOURCE CONTROL



Infiltration Trenches
Filter Strips
Pervious Paving
Rain Gardens
Construction Management
Storm Drain Maintenance

SOURCE FILTRATION



Bioretention
Regional Storm Filters
Dry Swales and Channels
Sediment Basins
Localized Retention

REGIONAL RETENTION



Wet Ponds
Constructed Wetlands
Extended Retention Ponds

Best Management Practice in Residential Settings

BMP design can be incorporated throughout the Planning Area, especially in residential neighborhoods and along local streets. Rain gardens, permeable paving, and detention basins are common types of BMP that can be found in residential settings.



RAIN GARDEN

Planted depression designed to absorb rainwater runoff from impervious urban areas like roofs, driveways, and walkways.

DETENTION BASIN

Designed to protect against flooding and, in some cases, downstream erosion by storing water for a limited period of time. Basins can be “dry” or “wet”, depending on whether they are designed to permanently retain a volume of water.



PERMEABLE PAVING

Paving method for roads, parking lots, driveways, and walkways that allows the movement of water around the paving material and into the soil.



Best Management Practice in Commercial Settings

BMP design can be incorporated throughout the Planning Area in commercial developments and along major arterials or collectors. Rain gardens, bio-swales, and permeable paving are common types of BMP that can be found in commercial developments.



RAIN GARDEN

Planted depression designed to absorb rainwater runoff from impervious urban areas like roofs, driveways, and walkways.



BIO-SWALE

Landscape elements designed to remove silt and pollution from surface runoff water. A common application is around parking lots, where substantial automotive pollution is collected by the paving and then flushed by rain.



PERMEABLE PAVING

Paving method for roads, parking lots, driveways, and walkways that allows the movement of water around the paving material and into the soil.



Proposed stormwater solution with architectural feature.



Detention basins are another type of stormwater regional BMP.



Example of a detention basin.



Options to street standards allow flexibility for runoff.

REGIONAL STORM WATER FACILITIES:

The construction of multiple, smaller “off-line” regional storm water facilities is the preferred storm water management approach in the planning area. These facilities will be maintained by the public-at-large and will vary in size, capacity, and design. The facilities are designated for areas generally not considered developable, such as floodplains and stream buffers, or they may be located within the parkway right-of-way.

The specific location and capacity of the various facilities should remain flexible until preliminary engineering studies are completed to determine the most cost effective options with the least environmental impact.

Each regional facility should be:

- Designed in a manner to serve as an amenity and/or gateway feature for the development area, while accommodating the storage necessary for regional detention and improving water quality.
- Designed to include “retention” of storm water thus providing a visual water feature, which may include a series of smaller detention facilities with pumps to recirculate water between them.
- Constructed prior to future development in the upstream watershed of the given facility.

Should land acquisition or construction cost considerations limit the locations for multiple facilities, another option may include combining multiple storm water facilities into a single large facility. However, this option results in lower water quality due to less infiltration and the tendency for larger facilities to retain more pollutants.

LOCALIZED STORM WATER MANAGEMENT:

New developments in the planning area are responsible for providing and maintaining localized storm water infiltration and detention to achieve flood protection (for the impacts generated by specific development) in the channel protection, overbank flood protection, and extreme flood protection events. This may be provided by a combination of detention, retention, and/or Best Management Practices (BMPs).

Storm water management will be enhanced in the planning area by implementing a series of Best Management Practices (BMPs) that achieve the following goals:

- Increase infiltration (water absorbed by the soil) of storm water runoff while in the basin;
- Increase the amount of time for storm water runoff to reach its receiving stream;
- Reduce the potential amount of sediment/pollutants that can be carried off by storm water runoff from rainfall; and
- Treat storm water runoff before it reaches the receiving stream.

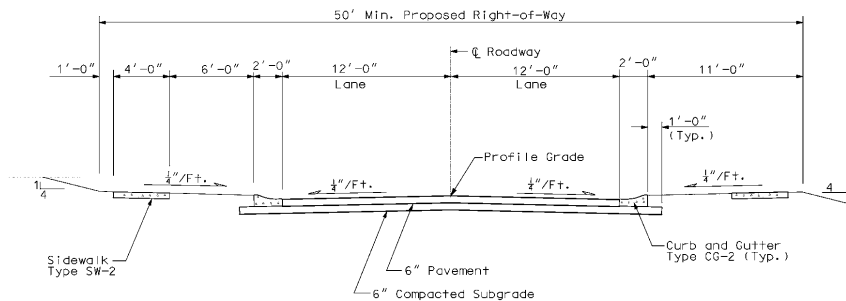
To improve water quality, BMPs should be designed and located so runoff is routed through a chain of successive treatments that remove pollutants

and increase water quality as much as possible before entering the streams of the watershed. BMPs used in the planning area should meet the minimum requirements set forth in the Manual of Best Management Practices for Storm Water Quality, September 2003 prepared by the Mid-America Regional Council and the American Public Works Association. Developers should submit storm water studies that demonstrate the effectiveness of proposed BMPs in lieu of localized detention facilities.

Careful consideration of the placement of BMPs throughout the watershed must be given to ensure water quality. Most BMPs implemented to improve storm water “quality” may also reduce the storm water “quantity”. This reduction in water “quantity” may also reduce the amount of detention storage required for the development, which in turn will reduce development costs. Potential reductions in development cost are true for many of BMPs that could be implemented in the watershed. The use of natural buffers and native vegetation may reduce the need for grading and the need for larger enclosed pipe systems which reduces long-term maintenance needs of the City.

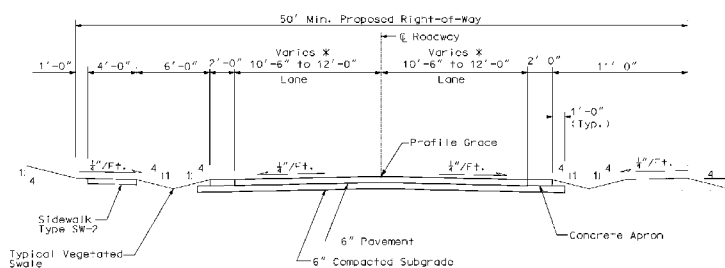
Localized storm water management may also be incorporated into the design of local and collector residential streets and parking lot designs. Swales may be used in place of curbs and gutters along streets and within parking lots. Alternative street designs may also include reduced pavement widths with a concrete apron rather than raised curbs, as well as vegetated swales with plantings similar to rain gardens in lieu of enclosed storm water pipe systems. Such alternative designs may result in reduced construction costs and achieve the objective of reducing the quantity of runoff while increasing infiltration and the quality of runoff.

CONVENTIONAL ROADWAY DESIGN



Standard street with curb and gutter with necessary storm water system.

ALTERNATIVE RESIDENTIAL ROADWAY DESIGN



* Lane Width Varies
Residential Access use 10'-6" Lanes
Residential Local use 11'-0" Lanes
Residential Collector use 12'-0" Lanes

Alternative street without curbs and using small ditches to filter pollutants and allow for rain gardens and native materials to line the ditches for better water quality.



This parking lot incorporates stormwater drainage into its design.



Rain gardens reduce runoff by allowing stormwater to soak into the ground.



Bioretention facilities are vegetated areas where soil acts as a filter for stormwater contaminants.



Stream bank erosion.



Stormwater detention basin as part of an overall “green” building approach, EcoWorks at Southlake.



Developers of projects that require large amounts of water must determine what steps are needed to provide adequate water supply to the project.

CONSTRUCT MULTIPLE-BENEFIT “GREEN” DETENTION BASINS

Acquire land and construct two multiple-benefit “green” detention basins (see Environmental and Stormwater Management Map page 46), including wet and dry extended detention basins and stormwater wetlands, where these facilities are more cost-effective than bridge, culvert, and sewer upgrades. Proposed locations are shown on the Environmental and Stormwater Management Map, and include:

- Two basins in the Second Creek watershed near NW Skyview Avenue north of LP Cookingham Drive. These could be designed into the new mixed-use community development.

IMPLEMENT STORMWATER CAPITAL PROJECTS

Water Services Department consultants have prepared watershed management plans for the Planning Area watersheds that are being compiled into a city-wide stormwater master plan.

- Consultants evaluated existing stormwater management problems and forecasted future needs based on the ultimate build out of the Planning Area watersheds.
- Consultants recommended over 40 capital improvement projects in the KCI area totaling over \$25 million.

The projects address existing and future stormwater management needs and specific development policies and programs, as described below. The Water Services Department Wet Weather Solutions web site provides more detail at <http://www.kcmo.org/water.nsf/web/defaultww?opendocument>.

- **Acquire additional land:** Land for riparian habitat restoration in the Rush and North Brush Creek watersheds, and enhancing stream buffers throughout these watersheds.
- **Conduct low-impact development pilot projects:** Projects in Rush and North Brush Creek watersheds to demonstrate flood hazard reduction opportunities.
- **Develop stormwater education, outreach, and assistance:** Programs for the Rush and North Brush Creek watersheds.
- **Stabilize streambanks:** Use natural methods in four locations in the North Brush Creek watershed and three locations in the Todd Creek watershed.

Urban Design

Framework and Guidelines



Introduction

The Urban Design Framework and Guidelines are intended to act as the guide for public and private investments made in each land use district recommended by the KCI Future Land Use Map on page 9. The overall goal of the *KCI Area Plan* is to provide a well designed realm of vibrant commercial and industrial centers, neighborhoods, parks, and institutions within close proximity of businesses, transportation, and recreation. All areas should be accessible through a pleasant walking and driving experience.

INTENT STATEMENTS

- Intent statements set forth the goals for development in the KCI area. The Urban Design Guidelines provide direction as to how the goals may be achieved.

FRAMEWORK

- Development framework is objective criteria that provide specific direction to achieve the intent statements. The term “may” to indicate that compliance should be encouraged. The standards set forth in the new Zoning and Development Code are the standards that will control once it is adopted by City Council.

GUIDELINES

- Design guidelines provide further considerations that promote the goals defined by the Intent Statements. Guidelines use the term “should” to denote that they are considered pertinent to achieving the stated intent but allow discretion based on site and project conditions.



Example of a mixed-use commercial center.



Principle: Environmental Management

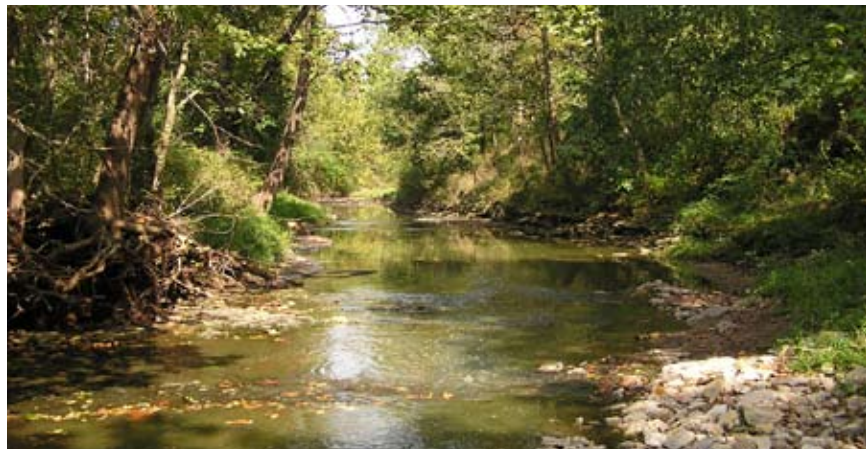
Environmental Management protects the natural resources such as stream corridors, floodplains, woodlands, and steep slopes and integrates them into the fabric of new development.

INTENT (ENVIRONMENTAL MANAGEMENT)

- Protect the existing environmental assets of the area and ensure future development in harmony with existing stream corridors and natural features.
- Use public education to promote activities that improve the quality of storm water runoff entering the streams.
- Improve water quality by maximizing the use of retention in detention areas.
- Protect mature woodlands and environmentally and culturally sensitive areas.
- Provide alternate subdivision design that is more efficient and provides more open space and greater natural resource protection than conventional development designs.
- Implement stream buffer standards to mitigate the adverse environmental impacts that development can have on streams and associated natural resource areas.

FRAMEWORK (ENVIRONMENTAL MANAGEMENT)

- Developments in woodland areas may comply with the standards of the City's Open Space and Conservation Development regulations and could be permitted modifications to the lot and building area standards to allow more compact development designs and to provide more open space.
- Development to retain the natural and visual character derived from topography, woodlands, streams, and riparian corridors.



Environmental Management protects the natural resources such as stream corridors, floodplains, woodlands, and steep slopes.

- Greenway corridors to preserve natural drainage areas, floodplains, and wooded areas to define and connect neighborhoods.
- Use the stream setback requirements established by Section 5200 KCAPWA and as designated by the City's Stream Buffer regulations.
- Encourage no-build areas on slopes that exceed 15% adjacent to stream setbacks.
- Reduce non-point source pollution in existing developed areas.
- Determine procedures and obtain approvals for operating in sensitive areas by coordinating with governing agencies including the Missouri Department of Natural Resources (MDNR), Missouri Department of Conservation (MDC), U.S. Army Corps of Engineers (USACE), and the State Historic Preservation Office (SHPO).
- Future Parkway design standards would require cross-sections to be consistent with the current Parks and Recreation Boulevard and Parkway Standards Plan.

GUIDELINES (ENVIRONMENTAL MANAGEMENT)

- Use retention facilities within detention areas where possible.
- Limit encroachment into protection areas through the use of cluster development with smaller lot sizes or by establishing no-build lines on future platted property.
- Educate neighborhood residents how to reduce non-point source pollution.
- Coordinate development planning with city staff for determine the most appropriate method to preserve noteworthy trees.
- Recommend tree surveys for the woodland areas that locate, identify by common name, and indicate caliper size of each tree greater than 10-inch caliper, unless otherwise specified by city staff. Use symbols or other methods to clearly indicate trees proposed to be saved and those proposed for removal.
- Recommend mitigation of trees over 10-inches in caliper in the woodland areas to be removed by construction. Such mitigation may include planting a similar quantity and similar species of trees and should involve working with the City Forester.
- Existing trees and vegetation to be saved should be protected from all construction activities, including earthwork operations, movement and storage of equipment and materials and dumping of toxic materials. Establish a minimum protection zone by installing temporary fencing around existing vegetation to be preserved, placing the fencing no closer to the trees than their drip lines, and maintaining fencing throughout the construction period.
- Consider enacting a woodland preservation ordinance.



Development to retain the natural and visual character derived from topography, woodlands, streams, and riparian corridors.



Conservation development limits encroachment into protection areas through the use of cluster development.



Woodland tree preservation is proposed.



Proposed water features.



Proposed rain gardens to assist with water runoff.

Principle: Stormwater Management

Stormwater Management reduces storm runoff quantity and increases water quality throughout the region through a system wide, comprehensive strategy for managing storm water within the study area.

INTENT (STORMWATER MANAGEMENT)

- Develop a system-wide network of regional detention to reduce flood damage downstream of the development area.
- Implement practices in future developments that increase storm water infiltration.
- Protect regional detention by providing localized detention in new developments.

FRAMEWORK (STORMWATER MANAGEMENT)

- Provide regional “off-line” detention area designed for multiple frequency storm events (i.e. 2-year, 10-year, 100-year storms).
- Design detention areas as amenity features.
- Limit stormwater runoff from new developments to pre-development levels.
- Adequately treat stormwater runoff from a site before discharge.
- Enforce the City’s standard erosion control practices to reduce sediment loads in stormwater runoff.

GUIDELINES (STORMWATER MANAGEMENT)

- Use graduated spillways on detention facilities.
- Provide detention, retention, and/or Best Management Practices (BMPs) in new developments as identified in Section 5200 KCAPWA.
- Provide a stormwater management study outlining the effectiveness of BMPs when used to limit storm water runoff in new development.
- Use BMPs to reduce the total suspended solids (TSS) load by 80% from storm water exiting new development sites.
- Use non-structural site design practices to promote the preservation of natural and connected open space within and between developments, and provide non-structural storm water treatment.
- Utilize erosion prevention and sediment control practices during construction or during any land disturbance activities in accordance with Section 5100 KCAPWA.

Principle: Open Space and Public Places

Open Space and Public Places contribute to the use and enjoyment of residents and should be provided in useful, quality spaces integrated purposefully into the overall development design.

INTENT (OPEN SPACE AND PUBLIC PLACES)

- To utilize well defined natural and developed open spaces as features that serve as the focus of block, lot, and circulation patterns.
- To utilize open space to bind various developments into cohesive interrelated districts.
- To supplement public open space such as parks and drainage corridors with privately developed open space that completes linkages.
- To use developed open spaces that serve as prominent amenities.
- To encourage small developed open spaces embedded in the pattern of streets, blocks, and lots serve as an amenity and creates value.

FRAMEWORK (OPEN SPACE AND PUBLIC PLACES)

- Provide public access to all public open space, natural and developed, directly from the public street, sidewalk, or trail system.
- Preserve areas of significant natural features, such as floodplains and drainage channels, mature woodlands and vegetation, stream corridors, wetlands, prominent bluffs and steep slope areas.
- Provide a neighborhood green (park) in areas of higher intensity residential development if located more than one-quarter mile walking distance from an existing or planned park.
- Provide site amenities such as public plazas or open landscaped gathering spaces in areas of business development. Such amenities may include public plaza with seating, landscaped mini-park/neighborhood green/or square, water feature, and a public art feature or clock tower.
- Integrate site amenities into the overall development design, rather than placing them on undevelopable remnant parcels or unusable perimeter buffers.

GUIDELINES (OPEN SPACE AND PUBLIC PLACES)

- Use open space to enhance the value and amenity of surrounding development and limit the amount of non-usable or inaccessible open space.



Future park amenities.



Future architectural elements.



Art in the landscape.



Preservation zone.



Design detention areas as an attractive water feature amenity or focal point.

- Create streets, blocks, lots, and building patterns that respond to views, landscape, and recreational opportunities when in proximity to natural open space.
- Encourage fronting lots and buildings on public and private open spaces rather than secluding open space behind buildings. Preserve areas of significant natural features through private common open space or public dedication.
- Design open storm drainage and detention areas as an attractive water feature amenity or focal point.
- Set back buildings, parking areas, and grading from significant natural features a sufficient distance to ensure their continued quality and natural functions.
- Design neighborhood greens (parks) to remain open and visible to residents rather than secluded behind buildings or surrounded by parking lots. Buildings adjacent to a green should front onto the space and include entrances and windows rather than black walls or rear facades.
- The perimeter of a neighborhood green should front entirely to the street/drive curb on at least two sides, with buildings abutting on no more than two sides and/or have an access by internal sidewalk or corridor connection to street.
- Incorporate amenities in neighborhood greens such as walkways, plazas, seating, recreational facilities, gazebos or other similar decorative shelters, pedestrian scale lighting, or other similar features for the use and enjoyment of residents.
- Smaller urban common areas should be accessible, well lit, and maximize visibility into the area from adjacent streets.



Public places should incorporate amenities such as seating, pedestrian scale lighting and other similar features.

Principle: Neighborhood Development

Neighborhood Development provides a range of housing opportunities integrated within proximity to activities of daily living.

INTENT (NEIGHBORHOOD DEVELOPMENT)

- Recommend that neighborhood developments ensure connections between neighborhoods/destinations and the Trails KC system.
- To provide a broad range of housing types and price levels that allow for a mix of residents with diverse ages, races, and incomes.
- To provide pedestrian-friendly neighborhood designs with a “sense of place” is seamlessly integrated with the natural environment, and includes a fine-grained mix of uses where no single use monopolizes a large area.
- To provide neighborhoods with a defined “center”, such as neighborhood green (park), plaza, or neighborhood retail center public space.
- To provide a variety of residential, commercial, institutional, civic, and personal activities of daily living within close proximity and within a five minute walking distance of residents. To utilize open space to bind various developments into cohesive interrelated districts.
- To ensure the affordability of workforce housing while encouraging a sustainable and quality development that enhances the character of the area.

FRAMEWORK (NEIGHBORHOOD DEVELOPMENT)

- Provide flexible development standards for lot sizes and setbacks, street design and layout, and stormwater management to minimize environmental impacts.
- Provide interconnected networks of streets wherever possible to encourage walking and reduce the number and length of automobile trips.
- Design mixed-use neighborhood areas to promote pedestrian activity and connections to adjoining land uses and neighborhoods.
- Provide the flexibility to promote quality workforce housing in an economical manner.

GUIDELINES (NEIGHBORHOOD DEVELOPMENT)

- Coordinate private development design efforts with city staff to integrate alternative development techniques and modifications to conventional development regulations to enhance the area and preserve open space.
- Locate estate lots and lowest density residential uses in areas where more intense development would negatively impact the terrain and existing woodlands.
- Locate higher building densities and more intense land uses within and around mixed use neighborhood centers.



Preservation with development.



Architectural focal points.



Open space with passive options.



Pocket parks.



Community connections.



Lot frontage onto parkway.



Opportunities to have a variety of street sections.



In residential areas, include vegetated swales in lieu of enclosed stormwater pipe systems along the roadways.

- Provide streets parallel to open space or looped streets with neighborhood greens to create a “sense of place” when through streets connections are not desirable due to topographic features.
- Provide neighborhoods with close access to open space lands or a range of parks, such as tot-lots, neighborhood greens, and community gardens.
- Locate civic buildings and public gathering spaces on prominent sites and design them with distinctive form to create a sense of community identity.

Principle: Community Streets

Community Streets establish a logical system of arterial, collector, and local streets to provide direct and fully interconnected access throughout the planning area.

INTENT (COMMUNITY STREETS)

- To provide a balanced interconnected system of streets, building layouts, sidewalks, and trails in a pattern that disperses traffic and provides multiple travel routes.
- To allow variations on street standards and provide alternative street designs that minimize the amount of impervious surfaces, conserve open space, and protect natural features and water quality.

FRAMEWORK (COMMUNITY STREETS)

- Layout streets to follow existing landscape and to minimize the impact on the natural terrain.
- Incorporate alternative street designs that reduce the quantity of stormwater runoff.
- Limit dead-end streets such as cul-de-sacs to areas where not practical for direct street connections and where most appropriate with the existing terrain.
- Private alleys shall be designed to minimize alley width, especially at the intersection of the alley and a public street. Alley flares should be the minimum width possible to accommodate public safety and maintenance equipment.

GUIDELINES (COMMUNITY STREETS)

- Provide on-street parallel parking in Mixed Use Neighborhood and Mixed Use Community areas.
- Use streets to define the boundaries of natural or developed open space.
- Allow curb-to-curb widths of local streets as narrow as practicable while accommodating expected traffic and pedestrians.
- In mixed use areas, use alleys as a means of concealing parking and service areas, for locating utilities, and for minimizing curb cuts.
- In residential areas, allow alternative local and collector residential street designs that may include reduced pavement widths with a concrete apron rather than raised curbs, and include vegetated swales with plantings similar to rain gardens in lieu of enclosed stormwater pipe systems along the roadways.

Principle: Gateways

Gateways are visual features at prominent locations that help people recognize they have arrived at a special place.

INTENT (GATEWAYS)

- To help orient visitors and residents to the area. There are two types of gateways proposed for the Plan Area: Major Gateways and Minor Gateways.
- To contribute to the unique identity of an area by visually highlighting special features at prominent locations with landscaping, public art, unique architecture or built features.
- The Urban Design Framework Map on page 72 shows where important urban design features are located in this area.

FRAMEWORK (GATEWAYS)

- Major Gateways are major focal points generally located on major roadways at major interchanges or at the intersections of primary image streets.
 - » They should be large enough to be seen as one approaches an on- and/or off-ramp or major intersection
 - » High-quality materials such as stone, cast stone, tile and/or masonry should be used
 - » Can be a large scale, highly visible landscape feature or could incorporate one or more unique architectural features
- Minor Gateways are smaller than Major Gateways and highlight particular neighborhoods or business districts.
 - » Should reinforce the individual district or neighborhood's unique character through imitation of the size, scale, materials and overall character of the commercial area, mixed-use area or neighborhood.

GUIDELINES (GATEWAYS)

- Incorporate Major Gateways at the primary entrance to the Airport from all major streets or highways, at the intersection of I-29 and Tiffany Springs Parkway, and the northern City limit on I-29/entrance to the City.
- Incorporate Minor Gateways at business districts, at major entry points of new residential developments, and at established neighborhoods where not already existing.



Gateways contribute to the unique identity of an area by visually highlighting special features at prominent locations.

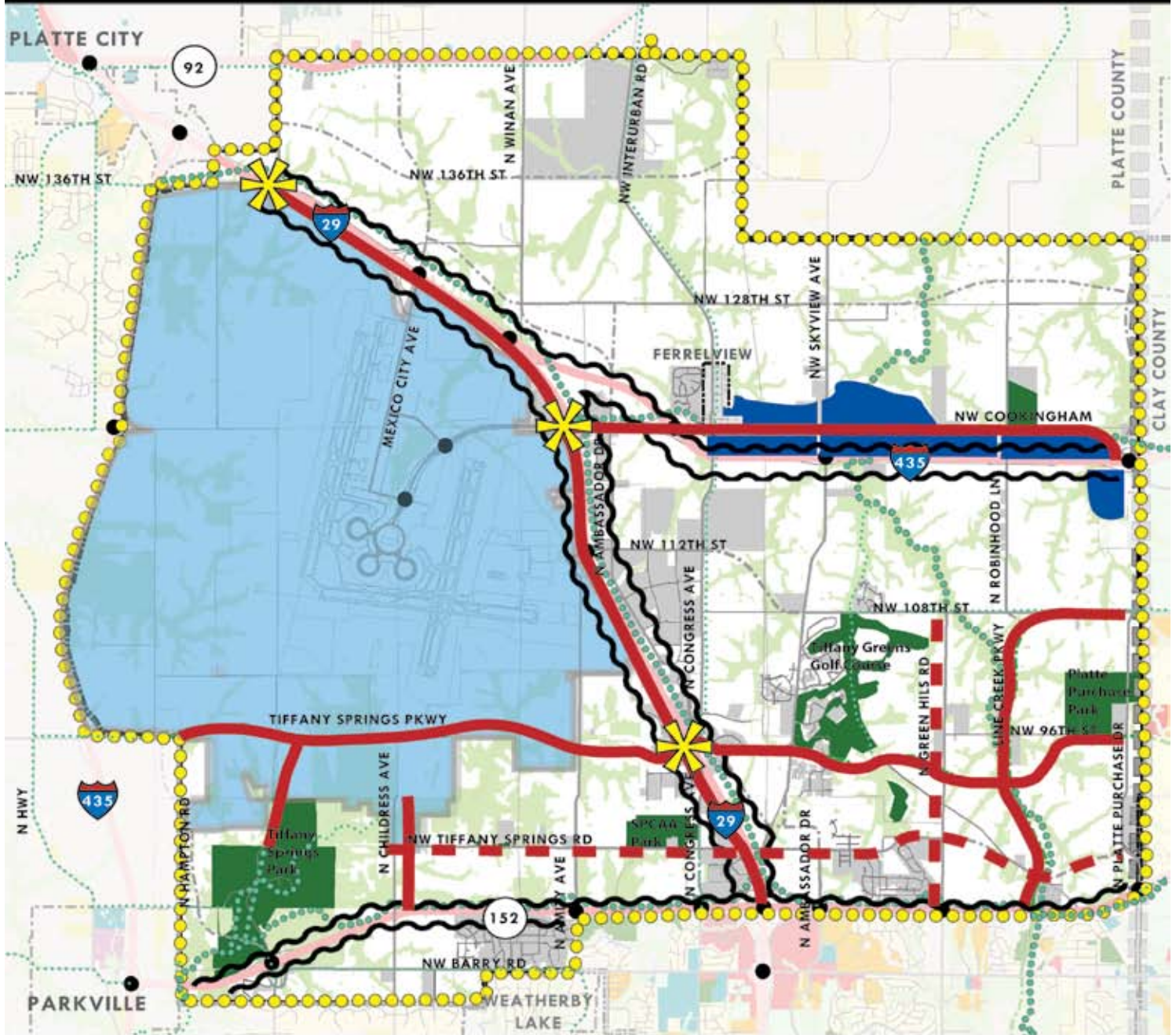


A major gateway is recommended at the primary entrance to the Airport from all major streets or highways.



Example of a Minor Gateway at the Tiffany Greens neighborhood entrance.

Urban Design Framework Map



Legend

- KCI Area
- City Limit
- Freeway/Expressway System
- Parkways/Boulevards, Existing
- Parkways/Boulevards Proposed
- Primary/Secondary Arterials, Existing
- Primary/Secondary Arterials, Proposed
- Local Streets
- Trails KC
- Neighborhood Connector Trail
- Parks
- Open Space/Buffer
- Airport
- Existing/Partial Interchange
- Primary Image Streets
- Secondary Image Streets
- Edges/Barriers
- Cookingham Mixed-Use District
- ★ Major Gateways



Miles

0 1 2



1 square mile

Gateways - Conceptual

Major and Minor

MAJOR GATEWAYS ("M")

Gateways are visual features at prominent locations that help people recognize that they have arrived at a special place.

Major gateways are focal points generally located on major roadways at major interchanges or at the intersections of primary image streets.

- Should be highly visible from the roadway.
- Made of high-quality materials.
- Be of a large scale, highly visible landscape feature or architectural element.



MINOR GATEWAYS ("m")

Minor gateways are smaller gateways that highlight particular neighborhoods or business districts.

- Should reinforce the individual district or neighborhood's unique character through imitation of size, scale, and materials.





Principle: Edges

Edges, or barriers, are major physical or visual features that divide an area.

INTENT (EDGES)

- To provide adequate physical and visual connections to breach edges and make linkages at appropriate locations.
- The major edges in the KCI area are formed by the freeway and highway system.

FRAMEWORK (EDGES)

- Create or improve safe bicycle and pedestrian access at intersections and interchanges, and across, under or over edge highways and interstates, with highest priority for locations where there are significant bicycle and pedestrian origins and destinations, or trail connections.

GUIDELINES (EDGES)

- Use landscape or public art elements to draw the eye away from the visual barrier of highways and freeways.
- Use hardscape, lighting, and mural features to de-emphasize underpasses.
- Create small gateway features at the entrances to neighborhoods or business districts that are along edge highways and interstates to soften the transition across the edge.



Well-designed edge formed by street network and bridge.

Principle: Image Streets

Image streets are streets most important to current and future travelers' and residents' positive and negative perceptions of an area. They are major streets, whether they be freeways, highways, or arterial streets.

INTENT (IMAGE STREETS)

- Set the “tone” of the area by establishing visual and aesthetic standards.

FRAMEWORK (IMAGE STREETS)

- The KCI area is dominated both visually and in terms of access by the freeway and highway system, whose strict federal and state regulation restricts the range of design options. The system is already complete so major changes are unlikely.
- Primary image streets are most important to positive and negative perceptions of an area.
- Aesthetic enhancements should be a priority on these corridors. Primary image streets include:
 - » The proposed future airport terminal and entrance road from Hwy. 152
 - » I-29
 - » Cookingham Drive
 - » Tiffany Springs Parkway
 - » Line Creek Parkway
- Secondary image streets contribute to perceptions of an area but are characterized by a less intense level of development. Secondary image streets include Green Hills Drive and Tiffany Springs Road.

GUIDELINES (IMAGE STREETS)

- Primary image street opportunities for highways and major arterials include:
 - » **New South Airport Entrance Road:** If the terminals are relocated, design the road to preserve the context of its natural setting and also to highlight its importance as the Airport entrance.
 - » **I-29:** Consider an intensive and distinctive “Grow Native” approach to landscaping in the right of way featuring not only grasses but also wildflowers.
 - » **I-29:** Continue to decrease billboards along I-29 within the KCI Planning Area, and create an office/business corridor.



Enhancements along an image street bring visual and aesthetic appeal.



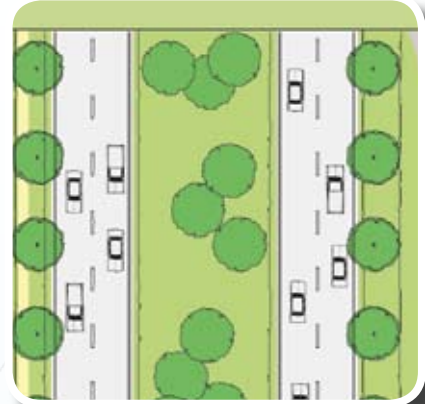
Landscaped medians and buffers can compliment an image street.

Image Streets - Conceptual

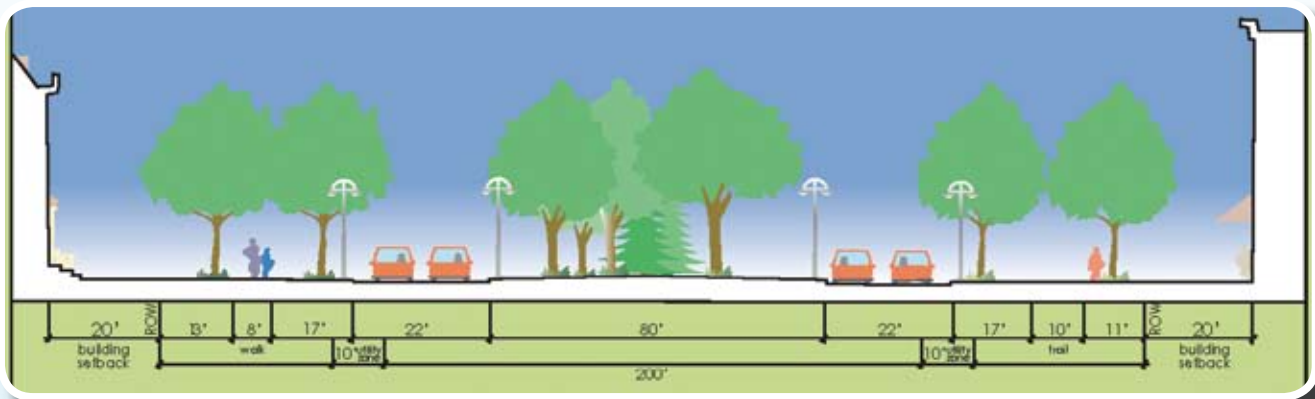
PRIMARY IMAGE STREET

Primary image streets are most important to current and future travelers' and residents' positive and negative perceptions of an area.

- Establish visual and aesthetic design for an area.
- Parkways can make a major contribution to an area's natural image.



MEDIANS



LOW-IMPACT DEVELOPMENT (LID)
AND OFF-STREET TRAIL



LANDSCAPE

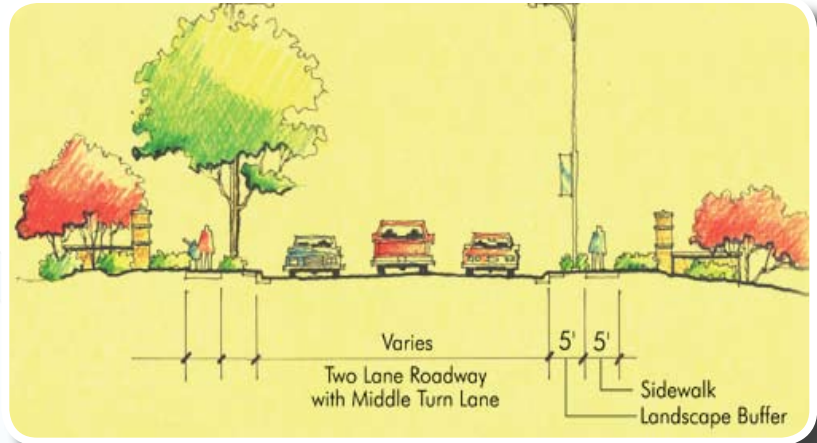


LANDSCAPED MEDIAN

Image Streets - Conceptual



ON-STREET BIKEWAY



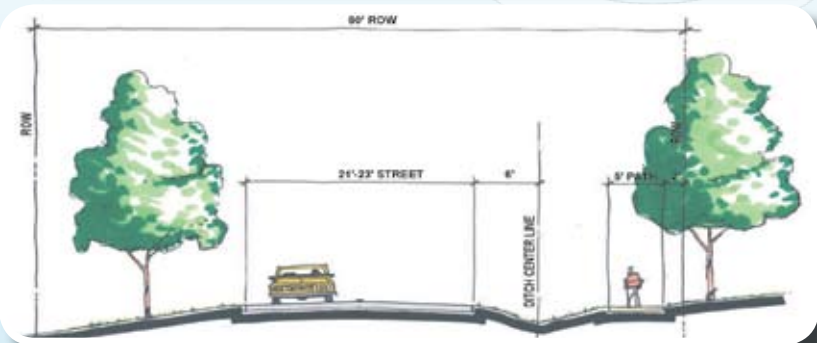
SECONDARY IMAGE STREET

Secondary image streets are those that contribute to the perception of an area.

- Characterized by a less intense level of development.



LANDSCAPE



LANDSCAPE



OFF-STREET TRAIL



ON-STREET PARKING



SIDEWALKS



SIDEWALKS



- » **I-29:** For new developments and major redevelopments that can be seen from I-29, require that the building finishes, screening of storage areas, and landscaping be comparable to those required for the front of the property.
- » **Cookingham Drive:** Has the opportunity to create a unique image for the northern part of the plan area.
- Parkway can make a major contribution to the area's image, particularly in helping to enhance the natural image. Since most of the parkway system in the KCI area is not constructed, this is a major opportunity to enhance the image of the area. Recommendations include:
 - » **Tiffany Springs Parkway:** Follow the parkway standards from the draft Boulevard and Parkways Standards of Kansas City, Missouri report. Design the parkway to preserve and promote the natural resources assets as an important element of context sensitive design.
 - » **Line Creek Parkway:** Prepare a Corridor Study for the portion of Line Creek Parkway north of Highway 152.
- Recommendations for secondary image streets include:
 - » **Green Hills Drive:** As a part of residential development in an Open Space Conservation development, complete reconstruction of Green Hills Drive to comply with the Secondary Image Street Streetscape guidelines.
 - » **Tiffany Springs Road:** As development and redevelopment occurs along the roadway, complete reconstruction of Tiffany Springs Road to comply with the Secondary Image Street Streetscape guidelines.



Secondary image street through residential development.

Principle: Pedestrian and Bicycle Circulation

Pedestrian and Bicycle Circulation must be safe and convenient for all users and provide connectivity within and between developments.

INTENT (PEDESTRIAN AND BICYCLE CIRCULATION)

- To provide a safe, convenient, inter-connected, and visually pleasing system of pedestrian walks, bike routes, and trails.
- To provide a pedestrian/bicycle network. Design the experience for pedestrians and bicyclists with the same or higher priority as that of the automobile (see the *Trails KC/Bike KC* plans for further details/standards).

FRAMEWORK (PEDESTRIAN AND BICYCLE CIRCULATION)

- Development shall provide pedestrian circulation from public walks to parking areas, building entries, plazas, transit stops, and open spaces. Walkways shall be provided to separate pedestrians and vehicles, and link ground level uses.
- Pedestrian and/or bicycle connections shall be made between residential neighborhoods, business centers, and open space systems. Pedestrian, bicycle, and visual connections shall also be provided wherever automobile connections are not feasible.
- A direct pedestrian connection to the building entry shall be provided from the public sidewalk.
- Design and locate pedestrian walkways and sidewalks in a manner that encourages their use. Review City Zoning and Development Ordinance for other requirements.
- Provide bicycle access between bicycle lanes and trails, with on-site bicycle parking areas in neighborhood business centers.

GUIDELINES (PEDESTRIAN AND BICYCLE CIRCULATION)

- Provide pedestrian walkways and sidewalks along all internal streets/drives and extend them to the boundaries of each individual development area to link with sidewalks along perimeter streets and with adjoining developments and to regional trails.
- Minimize street crossing distances. Alternatives may include refuge medians for pedestrians or pedestrian crossings the colored pavement or pavers to create a mixture of pattern and texture.
- Provide pedestrian walkways and sidewalks that link with adjacent or future parks, greenways, trails, schools, and civic spaces.
- Setback sidewalks from street and include an 8-foot or wider tree lawn between the curb and the sidewalk.



Neighborhood connectivity.



Mixed-use.



Neighborhood trail connectors.



Neighborhood linkages.



Accent crossings.



Greenway preservation.

- Allow sidewalks closer to the street curb in commercial mixed-use areas and incorporate tree planters and landscape when sidewalks are adjacent to the curb.
- Primary sidewalks in mixed use community district areas should be as wide as practicable but no less than eight (8) feet wide. Secondary sidewalks should be a minimum five (5) feet wide. Increase sidewalk width when adjacent to on-street parking and include a “transition zone” of pedestrian amenities along the street including street trees, landscape planters, pedestrian lighting, and other streetscape amenities.
- Walkways extending through parking areas should be incorporated into linear landscape strips, at least 17-feet in width to accommodate vehicle overhangs and landscape planting areas between the sidewalk and the curb.
- At each point where a sidewalk/walkway crosses a paved area in a parking lot or internal street or driveway, the crosswalk should be clearly delineated by a change in paving materials distinguished by color, texture, or height.
- Bicycle circulation should connect and align with pre-existing and planned off-site bicycle routes (Bike KC and Trails KC plans).
- Provide bicycle parking or storage near destinations, particularly in business areas.
- Locate bicycle parking in visible, active, and well lit areas; near building entries, convenient to primary bicycling access, and not encroaching on pedestrian walkways; and where from inside adjacent buildings.



Locate bicycle parking in visible, active areas.

Principle: Site Planning

Appropriately sited buildings will greatly enhance the formation of public streetscape and provide a “sense of place” for all users. The following conditions apply as stated, except on Aviation property when FAA guidelines regarding issues of health, safety, or welfare supersede.

INTENT (SITE PLANNING)–ALL RESIDENTIAL AND COMMERCIAL DISTRICTS

- To utilize building placement and open space to establish uninterrupted views.
- To ensure streets are treated as development frontage.
- To set standards of high quality architecture and site layout to ensure long term value and connected spaces.
- To ensure building placement and orientation is consistent with pedestrian orientation development, topography, sight lines, and the vision of the area.
- To provide for compatibility of use, access, and circulation between adjoining properties within the public realm.
- To provide special definition of streets, especially at key locations such as arterial street intersections or district gateways.
- To maximize the positive character of streets and buildings through continuity of architecture and landscape frontage, and to minimize the visual impact of parking lots and structures along streets.

FRAMEWORK (SITE PLANNING) – ALL RESIDENTIAL AND COMMERCIAL DISTRICTS

- Encourage that buildings front onto a street or major access drive to create a clear street edge and to provide physical definition of roadways as it relates to the public realm.
- Development could be permitted to place or orient buildings, parking, circulation, or service facilities on a lot in such a way as to treat primary street frontage(s) as a rear lot line. For purposes of this standard “rear” shall be defined to mean a portion of the property lacking public access and containing a predominance of service functions that significantly diminish the architectural or landscape quality of the development.
- Provide exceptional architectural design, a vertical architectural feature, public art, and/or exceptional designed public plaza or landscape at corners of major street intersections and around gateway areas, and that still creates continuity throughout the area.



Building character.



Proposed streetscapes.



Landscape improvements.



Frontage to roads.



Mixed housing stock.

GUIDELINES (SITE PLANNING)– ALL RESIDENTIAL AND COMMERCIAL DISTRICTS

- Design new development to relate with adjoining properties to minimize incompatible conditions, to maximize useful inter-connections, and to enhance the appearance of the properties from the street.
- Parking areas should not be located within a minimum 200-foot radius of the center point of a major street intersection or gateway, unless located behind a building.

FRAMEWORK (SITE PLANNING)– ALL RESIDENTIAL DISTRICTS

- Create a hierarchy of interconnected streets and drives that respect the natural contours of the land and is designed to pedestrians, bicyclists, and automobiles movements.
- Do not locate parking between the building and street, except for single-family detached dwellings and cluster single family developments consisting of zero lot line dwellings, cottage houses, or two-unit dwellings.
- Provide rear alley/rear garage access for attached residential structures in higher density residential areas and mixed use areas.
- Residential properties fronting onto parkways, except for residential estate lots, should not have direct driveway access. Garages and/or parking lots may be located and accessed from the rear. See the Parkways and Boulevards Standards Plan for more details.

GUIDELINES (SITE PLANNING)– ALL RESIDENTIAL DISTRICTS

- Allow reduced front yard and side yard building setbacks for the habitable portion of residential buildings, provided any street oriented garages maintain the minimum building setback required by the underlying zoning district.
- Common open space and recreational facilities should be centrally located where most conveniently accessible to a majority of residents.
- “T” intersections should be used in locations where it is desirable to highlight important public spaces or open space areas.
- Private drives serving cluster or multi-family development areas should be designed similar to public streets with detached sidewalks and planting strips between the curb and sidewalk, street trees, and lighting. Internal drives should not be designed with directly accessing angled or perpendicular parking stalls. However, parallel on-street parking may be incorporated where appropriate.

FRAMEWORK (SITE PLANNING) – ALL COMMERCIAL DISTRICTS

- In mixed use areas provide a tight network of streets, wide sidewalks, regular street tree plantings, buildings oriented toward the street with close setbacks, and accommodate on-street parking in addition to parking behind buildings.
- Locate buildings in mixed-use areas along a build-to-line, with no parking or vehicular circulation allowed between the building and street.
- In commercial (general office and retail) areas, limit the amount of parking and vehicular circulation located between the building and the street.
- For medium or large scale retailing (larger than 30,000 square feet) no more than 60 percent of total surface parking shall be located between buildings and arterial streets.

GUIDELINES (SITE PLANNING) – ALL COMMERCIAL DISTRICTS

- Nonresidential freestanding buildings should be clustered to define the street edge and create plazas or usable public gathering spaces between buildings. The even dispersal of freestanding buildings in a widely spaced pattern is not desirable in mixed use areas.
- Frame and enclose parking areas with buildings on at least three sides. A majority of the frontage along an arterial street or other major roadway should be occupied by buildings or other structures such as decorative architectural walls (not to exceed 3-feet in height) or by landscaping.
- Parking areas between buildings and the street, when permitted, should use special paving materials to create parking courts with a higher level of pedestrian amenity and create the “sense of place”.



Mixed-use centers.



Pedestrian zones.



Plaza configurations.



Streetscape store fronts.



Landscape screening.



Mixed housing.

Principle: Architectural Character

Architectural Character and treatment of buildings plays an important role in the identity of the KCI area and in creating a built environment in scale and character with pedestrian oriented activities.

INTENT (ARCHITECTURAL CHARACTER)–

ALL RESIDENTIAL AND COMMERCIAL DISTRICTS

- To ensure that the form and scale of buildings reinforces the character of streets and open space, and accommodate the movement of pedestrians.
- To encourage landscape screening and maintenance and to provide materials of quality, durability, and scale appropriate to pedestrian activity and contact.
- To minimize and use landscaping to buffer negative visual impacts leading to service areas on adjoining streets, public spaces, and adjacent property.
- To identify the location of a business with signage that is unobtrusive, as well as integrated with the buildings and/or landscape design.
- To minimize the dominance of garages on residential streets by providing a variety of street facing facades and garage locations.

FRAMEWORK (ARCHITECTURAL CHARACTER) -

ALL RESIDENTIAL AND COMMERCIAL DISTRICTS

- Design and place buildings on a site to define roadways as civic spaces.
- All building frontages visible from a street or a residential area could have the equivalent treatment of the primary building facade, with all service and loading facilities completely screened.
- Design buildings to relate directly to the street and reinforce the pedestrian scale and quality of street, civic, and open spaces using the following techniques:
 - » Shifts in building massing, variations in height, profile, and roof form that provide human scale while maintaining a consistent relationship of overall building form to the street edge
 - » Minimize long expanses of wall at a single height or in a single plane
 - » Vary floor heights to follow natural grade contours if significant variation is present

- Design buildings to provide human scale, interest, and variety using the following techniques:
 - » Building form variation with recessed or projecting bays
 - » Expression of architectural or structural modules and detail
 - » Diversity of window size, shape, or patterns that relate to interior functions
 - » Emphasize building entries through projecting or recessed forms, detail, color, or materials
 - » Variations of material, material modules, expressed joints and details, surface relief, color, and texture to break up large building forms and wall surfaces. Such detailing could include sills, headers, belt courses, reveals, pilasters, window bays, and similar features.
- Provide variation in building form, unless the area is designed in a manner that relies on uniformity to establish an architecturally pleasing pattern.
- Provide a primary entry for building facades facing arterial streets, or a facade treatment of comparable architectural, material, and detailing quality. Corner buildings need only provide public entry on one street facade.
- Connect primary building entries to the street sidewalk by the most direct route.
- Provide signs compatible with the character of the surrounding area and adjacent architecture in terms of scale, color, materials, and lighting levels.
- Any freestanding signs shall be monument style in appearance. Prohibit the use of pole signs and billboards.

GUIDELINES (ARCHITECTURAL CHARACTER)– ALL RESIDENTIAL AND COMMERCIAL DISTRICTS

- Provide human scaled architectural features in areas where pedestrian activity occurs or is encouraged and use the highest level of architectural detail close to pedestrian areas, near streets and entries, and around the ground floor.
- Provide windows, doors, plazas, and so forth on building facades adjacent to open space to encourage pedestrian activity and provide visual oversight.
- Use the highest architectural building design standard when located within 500 feet of a major intersection with a Parkway.



Community gathering space.



Architectural store front.



Prohibit the use of pole signs and billboards.



On-street parking for a commercial district.



Residential garage placement.

FRAMEWORK (ARCHITECTURAL CHARACTER) – ALL RESIDENTIAL DISTRICTS

- Provide the flexibility to promote quality workforce housing in an economical manner.
- Residential dwellings throughout a neighborhood may include a variety of garage placements and orientations to avoid monotonous rows of garage doors visible from the street.
- Buildings with two or more dwelling units could have no more than one garage per building oriented toward a street. Building designs with alternative garage types and locations shall be used to accommodate garages for other units (i.e. side and rear loaded garages).
- Cluster housing developments may include housing designs in which front and side loaded garages are recessed behind the forward-most enclosed area of the residence, not including window bays; or front facing garages occupying less than 33% of the front elevation may be flush with the forward-most enclosed area of the residence not including bay windows

GUIDELINES (ARCHITECTURAL CHARACTER) – ALL RESIDENTIAL DISTRICTS

- Provide residential dwelling designs with alternatives to street oriented garages, such as a mixture of rear and side loaded garages, attached and detached garages, carports, and porte cocheres.
- Minimize the prominence of garage doors viewed from the street by such methods as subdividing them into multiple doors to reduce the scale, incorporating doors into the architectural character of the primary structure, placing other architectural features such as porches, bays and upper floor forward of the garage, deeply recessing front loaded, attached garages, or orienting the garage to the side or rear.



Provide residential dwelling designs with alternatives to street-oriented garages, such as a mixture of rear and side-loaded garages.

FRAMEWORK (ARCHITECTURAL CHARACTER) – ALL COMMERCIAL DISTRICTS

- In mixed use neighborhood/community districts only, limit the size of non-residential uses to less than 25,000 square feet of gross floor area on any single floor, except food stores (groceries) which may include up to 40,000 square feet of gross floor area on a single floor. (Also see land use definitions on page 14).
- Locate and design large non-residential buildings to minimize the impact of windowless walls and service areas on public streets.
- Provide ground floor retail with direct pedestrian entries oriented toward public streets, parks, or plazas. Primary entries must be easily and directly visible from a street.
- Include a repeating pattern on building facades that includes no less than three of the elements, with at least one of the elements repeating horizontally.
 - » Color Change
 - » Texture Change
 - » Material Change
- Limit the use of outside commercial sales, storage, or display areas. However when permitted, such areas shall be screened with landscaping or enclosed with materials integral to the building architecture.

GUIDELINES (ARCHITECTURAL CHARACTER) – ALL COMMERCIAL DISTRICTS

- Provide a clear and consistent street edge with at least 50% of the building's "active wall" oriented toward the street. An "active wall" is the side of the building containing the majority of the storefronts, customer entrances, and windows.
- Incorporate a substantial proportion of transparent glazing at all occupied levels of building facades adjoining or oriented toward streets and pedestrian areas.
- Provide arcades, display windows with vision glass, spandrel glass (not to exceed 50% of the total glass on any on façade), entry area, awnings, or other such features along no less than 60% of their horizontal length of ground floor facades facing public streets.
- Provide no less than 20% window to solid wall area for portions of a building façade above the ground floor.
- Provide a roof form and other related elements such as roof material, color, trim, and lighting as an integral part of the building architecture. Roofs should not serve as attention-getting devices for signage or as an identifiable corporate image.
- Locate drive-through facilities (order stations, pick-up windows, bank teller windows, money machines, etc.), when permitted, on the side or rear of a building away from a street. Drive-through lanes may be allowed along a street if buffers are provided to screen such activities from the roadway (by landscaping and berms).



Store front architecture.



Architectural style.



Provide a clear and consistent street edge.



Architectural style.



Estate lot with tree preservation.



Streetscape possibilities with community connections.

Principle: Landscape Design

Landscape Design contributes to common usable open space that is of mutual benefit to surrounding property owners, businesses, and residents.

INTENT (LANDSCAPE DESIGN)

- To promote high quality landscape design, compatibility between uses, water conservation, and a well maintained appearance.
- To soften and mitigate the impacts of large buildings and paved areas.
- To provide transitions between developed and natural areas, and buffers between incompatible uses.

- To provide for the coordination of design and location of walls and fences to maximize the positive interrelationship of buildings, public streets, and open space.
- To create and enhance the connectivity of neighborhoods, mixed use and recreation developments by the layout and implementation of thoughtful and meaningful landscapes throughout the area.

FRAMEWORK (LANDSCAPE DESIGN)

- Encourage hiring a registered landscape architect for all landscape plans.
- Implement a street tree planting plan along all public streets.
- Maintain a continuous landscape treatment along arterial street frontages to the greatest degree possible.
- Preserve existing healthy trees to the greatest extent practicable, and protect such trees by removing existing damaged, decayed, or diseased trees.
- Coordinate with City staff, the design and materials for walls and fences for principal buildings in terms of color, quality, scale, and detail.

GUIDELINES (LANDSCAPE DESIGN)

- Provide automatic sprinkler systems with rain sensors for new landscape areas, or provide a hose bib network approved by City staff.
- Provide street tree species approved by the City that maximize the cohesiveness of each block without creating monocultures susceptible to disease.
- Provide street trees at a maximum spacing of approximately 40-feet on-center, while maintaining at least 25 feet separation from street lights.
- Provide foundation landscaping (not including street trees plantings) for residential dwellings equal to at least 0.5 percent of the structure value stated on the building permit.
- Provide transition from developed and irrigated landscape areas to any areas bordering natural open space with prairie land forms and vegetation.
- Use landscaping to define and enhance the sense of arrival at appropriate site locations, and to visually frame buildings and buffer parking, garage, and service areas.
- In residential, limit fences within a setback area along a public street to a maximum 4 feet in height.
- Where chain link or similar forms of security fencing are required, screen such fencing from view along adjoining streets and development. Final approval of fencing material will be determined by City staff.
- Refer to the City zoning/landscape ordinance for other requirements.
- Use existing vegetation and/or topography for landscape and enhancement of landscape plans submitted for review. Xeroscape and native plantings recommended.



Commercial landscaping.



Street landscaping.



Neighborhood landscaping.



Streetscape landscaping.



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Implementation



Introduction

This chapter provides the tools and steps to implement the guidelines, principles, recommendations, and actions outlined within the Plan and assigns responsibilities for implementation.

The work plan for implementation is summarized in the following matrix elements:

- **Action steps:** First steps in implementing Area Plan recommendations.
- **Implementation responsibilities:** Lead organizations and partners responsible for initiation, oversight, and monitoring. These may include:
 - » City: Includes various City Departments, Boards, and Commissions
 - » Agencies: May include Federal, State, and County departments and agencies
 - » Private Sector: May include developers and land owners
 - » Neighborhoods: May include homes associations, neighborhood groups, and homeowners
- **Anticipated time frame:** A general phasing of actions over which the recommendation is to occur, expressed in the following terms:
 - » Short-term: 1 to 5 years
 - » Medium-term: 5-10 years
 - » Long-term: over 10 years
 - » Ongoing



Implementation Matrices

ACTION STEPS	IMPLEMENTATION RESPONSIBILITY				TIME FRAME			
	City	Agencies	Private Sector	Neighborhoods	Short Term	Medium Term	Long Term	Ongoing
Hold a public meeting every 6 months, using the KCI contact list for invitations, to discuss planning and development progress and potential for organizing an overall coordinating group to include business, airport and neighborhoods.	●		●	●				●
Work with Platte County EDC and KCI TIF committees to develop a subcommittee for implementation of KCI Area Plan.	●	●						●



ACTION STEPS	IMPLEMENTATION RESPONSIBILITY				TIME FRAME			
	City	Agencies	Private Sector	Neighborhoods	Short Term	Medium Term	Long Term	Ongoing
Monitor zoning and development cases for conformance with KCI Area Plan land use policies, recommendations and design guidelines.	●		●	●				●
Adopt the "Airport Compatibility Overlay District" with tiered land use zones, and discourage development of incompatible land uses such as churches, schools, nursing homes and residential subdivisions.	●				●			
Create a development database to include data useful in identifying and promoting development properties, data to be used in determining change in the Contiguous Development Zone.	●		●		●			
Prepare a Residential and Mixed Use Developer Packet with relevant graphic excerpts from the Area Plan to be used to promote compatible development.	●		●	●				●
Work with area property and business owners to target, attract, and retain businesses in the area.	●	●	●					●
Work with developers to see that the Platte County Improvement Program is appropriately sequenced with development.	●		●					●
Work with area stakeholders to create an expedited development application revision process.	●	●	●		●			



ACTION STEPS	IMPLEMENTATION RESPONSIBILITY				TIME FRAME			
	City	Agencies	Private Sector	Neighborhoods	Short Term	Medium Term	Long Term	Ongoing
Use the Proposed Street Map as basic policy guidance for the construction and reconstruction of streets.	●		●					●
Monitor the preparation of Pedestrian Level of Service Impact Studies for new development and major roadways, with particular attention to promoting connections.	●		●					●
Set up annual meetings between planning, economic development and transit agencies to discuss how the groups can work together to promote transit in the area.	●	●	●					●
Prepare a Multi-Modal Design Developer Packet for distribution when there are developer inquiries.	●							●
Update the <i>Major Street Plan</i> to show NW 128th St. (from N. Winan Ave. to First Creek Rd.) as a Secondary Arterial rather than a Primary Arterial.	●				●			
Update the <i>Major Street Plan</i> to show Green Hills Rd. (from 108th St. to Tiffany Springs Rd.) as a Secondary Arterial rather than a Primary Arterial.	●				●			
Review (by City's Bicycle Pedestrian Coordinator) all proposed intersection improvements for pedestrian accommodations.	●							●
Develop a strategy to secure funding for priority transportation projects.	●	●		●				●



ACTION STEPS	IMPLEMENTATION RESPONSIBILITY				TIME FRAME			
	City	Agencies	Private Sector	Neighborhoods	Short Term	Medium Term	Long Term	Ongoing
Infrastructure								
Maintain existing infrastructure and upgrade inadequate infrastructure in developed areas before extending infrastructure into undeveloped areas.	●				●			
Initiate a voluntary buy-out program for existing properties in the floodplain and flood prone areas, and restore these areas to natural open space.	●			●		●		
Adopt and implement Conservation Development provisions in the Development Code update, and develop Low-Impact Development design criteria to reduce runoff and pollutants from future development.	●				●			
Develop a demonstration project for Low-Impact Development design in the southwest portion of the Contiguous Development Zone with criteria and a concept plan.	●				●			
Adopt and provide education for the revised KC Metro APWA Sections 5200 and 5600, the City's proposed Development Code, the KC-One Stormwater Management Plan, the City's proposed Stream Setback Ordinance, and the Wet Weather Solutions Program.	●							●
Incorporate Stormwater guidelines and recommendations into the site review process.	●							●
Develop an approach for the acquisition and management of land for riparian habitat restoration, with education component, in the Rush and North Brush Creek watersheds in the southwest part of the planning area.	●				●			
Design plans for regional stormwater facilities.	●	●			●			
Prepare development drainage studies to demonstrate the effectiveness of localized BMPs through the development approval process.	●	●	●					●
Coordinate infrastructure improvements.	●	●	●	●				●
Work with affected departments to make sure that stormwater-related capital improvements are appropriately sequenced.	●		●					●
Investigate, in areas with septic tanks scheduled for sewer service, payment approaches and contact neighborhoods with similar issues to work on joint approaches.	●		●	●				●
Work with developers and property owners to incorporate the Plan BMP recommendations as appropriate.	●	●	●	●				●



ACTION STEPS	IMPLEMENTATION RESPONSIBILITY				TIME FRAME			
	City	Agencies	Private Sector	Neighborhoods	Short Term	Medium Term	Long Term	Ongoing
Monitor proposed development for compliance with Urban Design Framework and Guidelines as a framework for all future development decisions within the Plan Area.	●			●				●
Develop an Urban Design Framework and Guidelines presentation and handout to be used by planning and economic development organizations as an educational tool.	●				●			
Work with local stakeholders to identify and select unique themes for gateways, edges, and image streets.	●		●	●				●
Work with property owners, business owners, residents and other stakeholders within identified districts, commercial areas, mixed use areas and neighborhoods to implement the Plan streetscape recommendations.	●		●	●				●
Require private developments in gateway areas to provide focal points in accordance with the development standards and Urban Design Framework and Guidelines and with public improvement urban design plans.	●	●						●

